

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 1, 2003, 10:42:27 ; Search time 37.7188 seconds  
(without alignments)  
387.853 Million cell updates/sec

Title: US-09-910-082a-190

Perfect score: 378  
Sequence: 1 MKLTCVIVAVLLTACQLTADDSRGTQKHRLASDPTKLSMSTRCKGTPCGRIVAVNCTGTGSC 65

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPTREMBL\_21:\*

- 1: sp\_archaea:\*
- 2: sp\_bacteria:\*
- 3: sp\_fungi:\*
- 4: sp\_human:\*
- 5: sp\_invertebrate:\*
- 6: sp\_mammal:\*
- 7: sp\_mhc:\*
- 8: sp\_organelle:\*
- 9: sp\_phage:\*
- 10: sp\_plant:\*
- 11: sp\_rodent:\*
- 12: sp\_virus:\*
- 13: sp\_vertebrate:\*
- 14: sp\_unclassified:\*
- 15: sp\_virus:\*
- 16: sp\_bacteriap:\*
- 17: sp\_archaeap:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	339	89.7	66	5	09NCV1
2	331	87.6	66	5	09NCV1
3	328	86.5	66	5	09NCV3
4	327	86.5	66	5	09NCV4
5	324	85.7	66	5	09NCV2
6	323	85.4	66	5	09NCV0
7	312	82.5	66	5	09NCU1
8	309	81.7	66	5	09NCU1
9	309	81.7	66	5	09NCU1
10	304	80.4	66	5	09NCV3
11	304	80.4	66	5	09NCV3
12	303	80.2	66	5	09NCV4
13	302	79.9	66	5	09NCV1
14	300	79.4	66	5	09NCV5
15	299	79.1	66	5	09NCV6
16	299	79.1	66	5	09NCW2

17	298	78.8	66	5	09NCW5
18	297	78.6	66	5	09NCV7
19	296	78.3	66	5	09NCV7
20	292	77.2	66	5	09NCV6
21	291	77.0	66	5	09NCW0
22	286	75.7	66	5	09NCV8
23	281	74.3	66	5	09NCV9
24	274	72.5	66	5	09NCV8
25	228.5	60.4	72	5	09NCV5
26	225.5	59.7	72	5	09NCV5
27	223.5	59.1	67	5	09NCV6
28	219.5	58.1	67	5	09NCV7
29	204.5	54.1	67	5	09NCV4
30	204.5	54.1	67	5	09NCV2
31	203.5	53.8	67	5	09NCV5
32	201.5	53.3	67	5	09NCV3
33	197.5	52.2	72	5	09NCV8
34	194.5	51.5	67	5	09NCV6
35	192.5	50.9	67	5	09NCV4
36	192.5	50.9	72	5	09NCV9
37	175	46.3	81	5	09BP83
38	168.5	44.6	79	5	09BP78
39	162.5	43.0	71	5	09UA87
40	159.5	42.2	71	5	09TVX4
41	156.5	41.4	70	5	09BP80
42	152.5	40.3	71	5	09UA90
43	151.5	40.1	70	5	09BP82
44	150.5	39.8	71	5	09UA88
45	150.5	39.8	76	5	09BP81

#### ALIGNMENTS

RESULT 1	09NCV1	PRELIMINARY;	PRT;	66 AA.
ID	09NCV1			
AC	09NCV1			
DT	01-OCT-2000 (TREMBLrel. 15, Created)			
DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)			
DT	01-JUN-2002 (TREMBLrel. 21, Last annotation update)			
DE	Four-loop conotoxin (Fragment).			
OS	Conus striatus (Striated cone).			
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;			
OC	Neogastropoda; Conoidea; Conidae; Conus.			
OX	NCBI_TaxID=6493;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	STRAIN=CTRH.1.6;			
RA	Duda T.F., Palumbi S.R.;			
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."			
RL	Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.			
DR	EMBL; AF174245; AAF89909.1;			
DR	HSSP; P05484; IMVI.			
DR	InterPro: IPR004214; Conotoxin.			
DR	Pfam: PF02950; Conotoxin.1.			
FT	NON_TER			
FT	SEQUENCE 66 AA; 6976 MW; 29A992736137DA05 CRC64;			
Query Match	89.7%; Score 339; DB 5; Length 66;			
Best local similarity	97.0%; Pred. No. 2, 3e-36;			
Matches	64; Conservative 0; Mismatches 2; Indels 0; Gaps 0;			
QY	6 VVIIVAVLLTACQLTADDSRGTQKHRLASDPTKLSMSTRCKGTPCGRIVAVNCTGTGSC 65			
DB	1 VVIIVAVLLTACQLTADDSRGTQKHRLASDPTKLSMSTRCKAAGPCGRIVAVNCTGTGSC 60			
QY	66 RSGKCG 71			
DB	61 RSGKCG 66			

## RESULT 2

QY 09N6N6 PRELIMINARY; PRT; 66 AA.  
AC 09N6N6: 01-OCT-2000 (TReMBLrel. 15, Created)  
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)  
DE 01-JUN-2002 (TReMBLrel. 21, Last annotation update)  
OS Conus striatus (Striated cone).  
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
OC Neogastropoda; Conoidea; Conidae; Conus.  
OX NCBI\_TaxID=6493;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN-CTRH\_1.5, AND CSTRH\_1.1;  
RA Duda T.F., Palumbi S.R.;  
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF174244; AAF89908.1; -;  
DR EMBL; AF174240; AAF89904.1; -;  
DR HSSP; P05484; IMVT.  
DR InterPro: IPR004214; Conotoxin.  
DR Pfam: PF02950; Conotoxin; 1.  
FT NON\_TER 1 1  
SQ SEQUENCE 66 AA; 6966 MW; 29A9927710CA7DA05 CRC64;

Query Match 87.6%; Score 331; DB 5; Length 66;  
Best Local Similarity 95.5%; Pred. No. 2.5e-35;  
Matches 63; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 6 VVIYAVLLITACOLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRIVNCTGSC 65  
DB 1 VVIYAVLLITACOLITADDSRGTKHRLRSDTKLSMSTRCKAAGSCSRIVNCTGSC 60  
QY 66 RSGKCG 71  
DB 61 RSGKCG 66

## RESULT 3

QY 09NCV3 PRELIMINARY; PRT; 66 AA.  
AC 09NCV3: 01-OCT-2000 (TReMBLrel. 15, Created)  
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)  
DE 01-JUN-2002 (TReMBLrel. 21, Last annotation update)  
OS Four-loop conotoxin (Fragment).  
OC Conus striatus (Striated cone).  
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
OC Neogastropoda; Conoidea; Conidae; Conus.  
OX NCBI\_TaxID=6493;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN-CTRH\_1.3;  
RA Duda T.F., Palumbi S.R.;  
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF174242; AAF89906.1; -;  
DR HSSP; P05484; IMVT.  
DR InterPro: IPR004214; Conotoxin.  
DR Pfam: PF02950; Conotoxin; 1.  
FT NON\_TER 1 1  
SQ SEQUENCE 66 AA; 7019 MW; 89B89B7AF1A7C7B3 CRC64;

Query Match 86.8%; Score 328; DB 5; Length 66;  
Best Local Similarity 93.9%; Pred. No. 6.2e-35;  
Matches 62; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 6 VVIYAVLLITACOLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRIVNCTGSC 65  
DB 1 VVIYAVLLITACOLITADDSRGTKHRTLSKTKLSMSTRCKAAGPCSRIVNCTGSC 60

QY 66 RSGKCG 71  
DB 61 RSGKCG 66

## RESULT 4

QY 09NCV4 PRELIMINARY; PRT; 66 AA.  
AC 09NCV4: 01-OCT-2000 (TReMBLrel. 15, Created)  
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)  
DE 01-JUN-2002 (TReMBLrel. 21, Last annotation update)  
OS Conus striatus (Striated cone).  
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
OC Neogastropoda; Conoidea; Conidae; Conus.  
OX NCBI\_TaxID=6493;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN-CTRH\_1.2;  
RA Duda T.F., Palumbi S.R.;  
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF174241; AAF89905.1; -;  
DR HSSP; P05484; IMVT.  
DR InterPro: IPR004214; Conotoxin.  
DR Pfam: PF02950; Conotoxin; 1.  
FT NON\_TER 1 1  
SQ SEQUENCE 66 AA; 6980 MW; 286F491D7CA7DA05 CRC64;

Query Match 86.5%; Score 327; DB 5; Length 66;  
Best Local Similarity 93.9%; Pred. No. 8.3e-35;  
Matches 62; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 6 VVIYAVLLITACOLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRIVNCTGSC 65  
DB 1 VVIYAVLLITACOLITADDSRGTKHRLRSDTKLSMSTRCKAAGSCSRIVNCTGSC 60  
QY 66 RSGKCG 71  
DB 61 RSGKCG 66

## RESULT 5

QY 09NCV2 PRELIMINARY; PRT; 66 AA.  
AC 09NCV2: 01-OCT-2000 (TReMBLrel. 15, Created)  
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)  
DE 01-JUN-2002 (TReMBLrel. 21, Last annotation update)  
OS Four-loop conotoxin (Fragment).  
OC Conus striatus (Striated cone).  
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
OC Neogastropoda; Conoidea; Conidae; Conus.  
OX NCBI\_TaxID=6493;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN-CTRH\_1.4;  
RA Duda T.F., Palumbi S.R.;  
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF174243; AAF89907.1; -;  
DR HSSP; P05484; IMVT.  
DR InterPro: IPR004214; Conotoxin.  
DR Pfam: PF02950; Conotoxin; 1.  
FT NON\_TER 1 1  
SQ SEQUENCE 66 AA; 7033 MW; 887E401681A7C7B3 CRC64;

Query Match 85.7%; Score 324; DB 5; Length 66;  
Best Local Similarity 92.4%; Pred. No. 2e-34;

Matches 61; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

QY 6 VVIIVALLTTACQLTTADDSRGTOKHRALSDPTKLSMSTRCKGTGKPCSRIVNCTGTSC 65  
 |||||  
 Db 1 VVIIVALLTTACQLTTADDSRGTOKHRALSDPTKLSMSTRCKGTGKPCSRIVNCTGTSC 60

QY 66 RSGKCG 71  
 |||||  
 Db 61 RSGKCG 66

RESULT 6  
 Q9NCV0 PRELIMINARY; PRT; 66 AA.

AC Q9NCV0  
 DT 01-OCT-2000 (TREMBLrel. 15, Created)  
 DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)  
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus striatus (Striated cone).  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OX NCBI\_TaxID=6493;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN-CSTRH\_1-7;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
 RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AF174246; AAF89910.1; -;  
 DR HSSP; P05484; 1MVI.  
 DR InterPro: IPR004214; Conotoxin.  
 DR Pfam: PF02950; Conotoxin; 1.  
 FT NON\_TER 1 1  
 SQ SEQUENCE 66 AA; 6981 MW; 20CDD33D7CA7DA05 CRC64;

Query Match 85.4%; Score 323; DB 5; Length 66;  
 Best Local Similarity 92.4%; Pred. No. 2.7e-34;  
 Matches 61; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 6 VVIIVALLTTACQLTTADDSRGTOKHRALSDPTKLSMSTRCKGTGKPCSRIVNCTGTSC 65  
 |||||  
 Db 1 VVIIVALLTTACQLTTADDSRGTOKHRALSDPTKLSMSTRCKGTGKPCSRIVNCTGTSC 60

QY 66 RSGKCG 71  
 |||||  
 Db 61 RSGKCG 66

RESULT 7  
 Q9NCU1 PRELIMINARY; PRT; 66 AA.

AC Q9NCU1  
 DT 01-OCT-2000 (TREMBLrel. 15, Created)  
 DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)  
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus striatus (Striated cone).  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OX NCBI\_TaxID=6493;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN-CSTRH\_1-7;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
 RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AF174267; AAF89931.1; -;  
 DR HSSP; P05484; 1MVI.  
 DR InterPro: IPR004214; Conotoxin.  
 DR Pfam: PF02950; Conotoxin; 1.

FT NON\_TER 1 1  
 SQ SEQUENCE 66 AA; 6951 MW; 0D9868C0A7A1A39F CRC64;

Query Match 82.5%; Score 312; DB 5; Length 66;  
 Best Local Similarity 89.4%; Pred. No. 7.2e-33;  
 Matches 59; Conservative 2; Mismatches 5; Indels 0; Gaps 0;

QY 6 VVIIVALLTTACQLTTADDSRGTOKHRALSDPTKLSMSTRCKGTGKPCSRIVNCTGTSC 65  
 |||||  
 Db 1 VVIIVALLTTACQLTTADDSRGTOKHRALSDPTKLSMSTRCKGTGKPCSRIVNCTGTSC 60

QY 66 RSGKCG 71  
 |||||  
 Db 61 RSGKCG 66

RESULT 8  
 Q9N628 PRELIMINARY; PRT; 66 AA.

AC Q9N628  
 DT 01-OCT-2000 (TREMBLrel. 15, Created)  
 DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)  
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)  
 DE Four-loop conotoxin precursor (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OX NCBI\_TaxID=101291;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN-CCATH\_111\_9; AND CCATH\_111\_6;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
 RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AF174229; AAF89893.1; -;  
 DR EMBL; AF174226; AAF89890.1; -;  
 DR HSSP; P05484; 1MVI.  
 DR InterPro: IPR004214; Conotoxin.  
 DR Pfam: PF02950; Conotoxin; 1.  
 FT NON\_TER 1 1  
 SQ SEQUENCE 66 AA; 7057 MW; E7A5E310968B7DA CRC64;

Query Match 81.7%; Score 309; DB 5; Length 66;  
 Best Local Similarity 87.9%; Pred. No. 1.8e-32;  
 Matches 58; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 6 VVIIVALLTTACQLTTADDSRGTOKHRALSDPTKLSMSTRCKGTGKPCSRIVNCTGTSC 65  
 |||||  
 Db 1 VVIIVALLTTACQLTTADDSRGTOKHRALSDPTKLSMSTRCKGTGKPCSRIVNCTGTSC 60

QY 66 RSGKCG 71  
 |||||  
 Db 61 RSGKCG 66

RESULT 9  
 Q9NCW3 PRELIMINARY; PRT; 66 AA.

AC Q9NCW3  
 DT 01-OCT-2000 (TREMBLrel. 15, Created)  
 DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)  
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OX NCBI\_TaxID=101291;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN-CCATH\_111\_7;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-

```
RT      eating Conus."
RL      Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR      EMBL: AF174220; AAF89884.1; -.
DR      HSSP: P05484; 1MYT.
DR      InterPro: IPR004214; Conotoxin.
DR      Pfam: PF02950; Conotoxin; 1.
FT      NON_TER
SQ      SEQUENCE 66 AA; 7054 MW; E9FE5E310968A1AC CRC64;

Query Match
Best Local Similarity 81.7%; Score 309; DB 5; Length 66;
Matches 58; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY      6 VVIIVALLITACQLITADDSRGTKHRLASDTKLSMSTRCKGKGPCSRRIAYNCTGSC 65
        |||
        1 VVIIVALLITACQLITADDSRGTKHRLASDTKLSMSTRCKGKGPCSRRTSYDCTGSC 60
DB      66 RSGKCG 71
        |||
        61 RSGRCG 66

RESULT 10
ID      Q9N633      PRELIMINARY;      PRT;      66 AA.
AC      Q9N633;
DT      01-OCT-2000 (TREMBlrel. 15, Created)
DT      01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT      01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE      Four-loop conotoxin precursor (Fragment).
OS      Conus catus.
OC      Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC      Neogastropoda; Conoidea; Conidae; Conus.
OX      NCBI_TaxID=101291;
RN      [1]
RP      SEQUENCE FROM N.A.
RC      STRAIN=CCATH_11.6, CCATH_11.1, AND CCATH_11.2;
RA      Duda T.F., Palumbi S.R.;
RT      "Molecular evolution of four-loop conotoxin precursors from fish-
        eating Conus."
RL      Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR      EMBL: AF174219; AAF89883.1; -.
DR      EMBL: AF174214; AAF89878.1; -.
DR      EMBL: AF174215; AAF89879.1; -.
DR      HSSP: P05484; 1MYT.
DR      InterPro: IPR004214; Conotoxin.
DR      Pfam: PF02950; Conotoxin; 1.
FT      NON_TER
SQ      SEQUENCE 66 AA; 7053 MW; E445338A6968A1AC CRC64;

Query Match
Best Local Similarity 80.4%; Score 304; DB 5; Length 66;
Matches 57; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

QY      6 VVIIVALLITACQLITADDSRGTKHRLASDTKLSMSTRCKGKGPCSRRIAYNCTGSC 65
        |||
        1 VVIIVALLITACQLITADDSRGTKHRLASDTKLSMSTRCKGKGPCSRRTSYDCTGSC 60
DB      66 RSGKCG 71
        |||
        61 RSGRCG 66

RESULT 11
ID      Q9N625      PRELIMINARY;      PRT;      66 AA.
AC      Q9N625;
DT      01-OCT-2000 (TREMBlrel. 15, Created)
DT      01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT      01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE      Four-loop conotoxin precursor (Fragment).
OS      Conus catus.
OC      Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
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OC      Neogastropoda; Conoidea; Conidae; Conus.
OX      NCBI_TaxID=101291;
RN      [1]
RP      SEQUENCE FROM N.A.
RC      STRAIN-VARIOUS STRAINS;
RA      Duda T.F., Palumbi S.R.;
RT      "Molecular evolution of four-loop conotoxin precursors from fish-
        eating Conus."
RL      Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR      EMBL: AF174228; AAF89892.1; -.
DR      EMBL: AF174221; AAF89885.1; -.
DR      EMBL: AF174222; AAF89886.1; -.
DR      EMBL: AF174224; AAF89888.1; -.
DR      EMBL: AF174225; AAF89889.1; -.
DR      HSSP: P05484; 1MYT.
DR      InterPro: IPR004214; Conotoxin.
DR      Pfam: PF02950; Conotoxin; 1.
FT      NON_TER
SQ      SEQUENCE 66 AA; 7056 MW; EA11338A6968B7DA CRC64;

Query Match
Best Local Similarity 80.4%; Score 304; DB 5; Length 66;
Matches 57; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

QY      6 VVIIVALLITACQLITADDSRGTKHRLASDTKLSMSTRCKGKGPCSRRIAYNCTGSC 65
        |||
        1 VVIIVALLITACQLITADDSRGTKHRLASDTKLSMSTRCKGKGPCSRRTSYDCTGSC 60
DB      66 RSGKCG 71
        |||
        61 RSGRCG 66

RESULT 12
ID      Q9NCW4      PRELIMINARY;      PRT;      66 AA.
AC      Q9NCW4;
DT      01-OCT-2000 (TREMBlrel. 15, Created)
DT      01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT      01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE      Four-loop conotoxin (Fragment).
OS      Conus catus.
OC      Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC      Neogastropoda; Conoidea; Conidae; Conus.
OX      NCBI_TaxID=101291;
RN      [1]
RP      SEQUENCE FROM N.A.
RC      STRAIN=CCATH_11.5;
RA      Duda T.F., Palumbi S.R.;
RT      "Molecular evolution of four-loop conotoxin precursors from fish-
        eating Conus."
RL      Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR      EMBL: AF174218; AAF89882.1; -.
DR      HSSP: P05484; 1MYT.
DR      InterPro: IPR004214; Conotoxin.
DR      Pfam: PF02950; Conotoxin; 1.
FT      NON_TER
SQ      SEQUENCE 66 AA; 6995 MW; E445338A6A7A1AC CRC64;

Query Match
Best Local Similarity 80.2%; Score 303; DB 5; Length 66;
Matches 57; Conservative 3; Mismatches 6; Indels 0; Gaps 0;

QY      6 VVIIVALLITACQLITADDSRGTKHRLASDTKLSMSTRCKGKGPCSRRIAYNCTGSC 65
        |||
        1 VVIIVALLITACQLITADDSRGTKHRLASDTKLSMSTRCKGKGPCSRRTSYDCTGSC 60
DB      66 RSGKCG 71
        |||
        61 RSGRCG 66

RESULT 13
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09NCW1
ID 09NCW1 PRELIMINARY: PRT: 66 AA.
AC 09NCW1:
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11L7;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
RT eating Conus.";
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF174227; AAF89891.1; -.
DR HSSP: P05484; IMVI.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA: 7066 MW: E41338A6968B415 CRC64;

Query Match
Best Local Similarity 79.9%; Score 302; DB 5; Length 66;
Matches 57; Conservative 3; Mismatches 6; Indels 0; Gaps 0;

0Y 6 VVIAVALLTACQILTADDSRGTOKRALRSPTKLSMSTRCKGTGKPCSRITAYNCTGSC 65
Db 1 VVIAVALLTACQILTADDSRGTOKRALRSPTKLSMSTRCKGTGKPCSRITAYNCTGSC 60
QY 66 RSGKCG 71
Db 61 RSGKCG 66

RESULT 14
09NCV5
ID 09NCV5 PRELIMINARY: PRT: 66 AA.
AC 09NCV5:
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_R4;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
RT eating Conus.";
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF174238; AAF89902.1; -.
DR HSSP: P05484; IMVI.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA: 7081 MW: 66E4898A6968B31B CRC64;

Query Match
Best Local Similarity 79.4%; Score 300; DB 5; Length 66;
Matches 56; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

0Y 6 VVIAVALLTACQILTADDSRGTOKRALRSPTKLSMSTRCKGTGKPCSRITAYNCTGSC 65
Db 1 VVIAVALLTACQILTADDSRGTOKRALRSPTKLSMSTRCKGTGKPCSRITAYNCTGSC 60
QY 66 RSGKCG 71

```

```

Db 61 RSGKCG 66

RESULT 15
09NCW6
ID 09NCW6 PRELIMINARY: PRT: 66 AA.
AC 09NCW6:
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11.3;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
RT eating Conus.";
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF174216; AAF89880.1; -.
DR HSSP: P05484; IMVI.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA: 7023 MW: E445339B6968B0AC CRC64;

Query Match
Best Local Similarity 79.1%; Score 299; DB 5; Length 66;
Matches 56; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

0Y 6 VVIAVALLTACQILTADDSRGTOKRALRSPTKLSMSTRCKGTGKPCSRITAYNCTGSC 65
Db 1 VVIAVALLTACQILTADDSRGTOKRALRSPTKLSMSTRCKGTGKPCSRITAYNCTGSC 60
QY 66 RSGKCG 71
Db 61 RSGKCG 66

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Search completed: July 1, 2003, 10:52:16  
Job time : 38.7188 secs

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GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 1, 2003, 10:41:52 : Search time 73.2188 Seconds  
(without alignments)  
129.213 Million cell updates/sec

Title: US-09-910-082A-190

Perfect score: 378  
Sequence: 1 MKLTCVYIVAVLLTACQLI.....PCSRIVANCGTSGCRSGKCG 71

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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- 19: /SID52/gcgdata/geneseq/geneseq-emb1/AA1998.DAT.\*
- 20: /SID52/gcgdata/geneseq/geneseq-emb1/AA1999.DAT.\*
- 21: /SID52/gcgdata/geneseq/geneseq-emb1/AA2000.DAT.\*
- 22: /SID52/gcgdata/geneseq/geneseq-emb1/AA2001.DAT.\*
- 23: /SID52/gcgdata/geneseq/geneseq-emb1/AA2002.DAT.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	378	100.0	71	23	AB96657
2	377	99.7	71	23	AB96634
3	376	99.5	71	23	AB96629
4	359	95.0	71	23	AB96680
5	356	94.2	71	21	AA87541
6	352	93.1	71	23	AB96607
7	350	92.6	71	23	AB96661
8	349	92.3	71	23	AB96609
9	327	86.5	71	23	AB96632
10	324	85.7	71	14	AA838795

11	324	85.7	71	23	AB96662
12	319	84.4	71	23	AB96659
13	314	83.1	73	23	AB96631
14	311	82.3	71	23	AB96624
15	306	81.0	73	23	AB96675
16	305	80.7	71	23	AB96614
17	304	80.4	71	23	AB96697
18	304	80.4	73	21	AA43717
19	303	80.2	73	23	AB96626
20	301	79.6	71	23	AB96683
21	300	79.4	71	23	AB96692
22	296	78.3	71	23	AB96616
23	296	78.3	71	23	AB96690
24	271.5	71.8	75	23	AB96653
25	269.5	71.3	74	23	AB96641
26	268.5	71.0	72	23	AB96671
27	268.5	71.0	75	23	AB96646
28	259.5	68.7	73	14	AA838796
29	259.5	68.7	73	23	AB96640
30	259.5	68.7	73	23	AB96642
31	251.5	66.5	72	23	AB96681
32	248.5	65.7	72	23	AB96633
33	248.5	65.7	72	23	AB96638
34	247.5	65.5	76	23	AB96689
35	245.5	64.9	73	23	AB96687
36	241.5	63.9	73	23	AB96688
37	239	63.2	71	23	AB96667
38	238.5	63.1	73	23	AB96645
39	237.5	62.8	74	23	AB96654
40	237.5	62.8	76	23	AB96612
41	235.5	62.3	72	23	AB96647
42	233.5	61.8	72	23	AB96610
43	233.5	61.8	77	23	AB96608
44	232	61.4	72	23	AB96677
45	232	61.4	76	23	AB96595

#### ALIGNMENTS

RESULT 1	
AB96657	AB96657 standard; Peptide: 71 AA.
ID	AB96657
AC	AB96657;
DT	12-JUL-2002 (first entry)
XX	XX
XX	XX
DE	Omega-conopeptide M6.1 propeptide.
XX	XX
KW	Omega-conopeptide; analgesic; anticonvulsant; vasotrophic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.
KW	XX
OS	XX
OS	XX
PN	Conus magus.
XX	XX
XX	XX
PD	WO200207675-A2.
XX	XX
XX	31-JAN-2002.
PF	23-JUL-2001; 2001WO-US23041.
XX	XX
PR	21-JUL-2000; 2000US-219616P.
XX	XX
XX	05-FEB-2001; 2001US-265888P.
XX	XX
PA	(UTAH ) UNIV UTAH RES FOUND.
PA	(COGN-) COGNETIX INC.

XX	Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI	Jacobsen R, Jones RM, Cartier GE;
PI	WPI: 2002-257318/30.
DR	N-PSDB; ABL98916.
XX	
PI	New omega-conopeptides useful for treating disorders associated with
PI	voltage gated ion channels e.g. pain, inflammation, neurological or
PI	cardiovascular disorders -
PS	Claim 1(c): Page 52; 195pp; English.
XX	
CC	The invention relates to isolated omega-conopeptides, nucleic acid
CC	sequences encoding them, and propeptide sequences. The activity of
CC	the peptides of the invention may be described as, analgesic,
CC	anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC	cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC	tranquilliser, vulneraire, antipsychotic, anxiolytic and neuroleptic.
CC	Peptides of the invention act by modulating the activity of voltage gated
CC	ion channels. They may be used for treating or preventing disorders
CC	associated with voltage gated ion channels such as neurological injury
CC	disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC	associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC	cerebrovascular accident, brain or spinal chord trauma, drowning,
CC	suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC	migraine; inflammation or cardiovascular disorders. They may also be used
CC	for treating psychiatric disorders e.g. psychosis, anxiety or
CC	schizophrenia. The analgesic agents of the invention show diminished side
CC	effects and toxicity, and are non-addictive. The sequences given in
CC	records ABB9655-ABB96697 represent omega-conopeptide propeptide
CC	sequences.
XX	
SQ	Sequence 71 AA;
QY	Query Match 100.0%; Score 378; DB 23; Length 71;
DB	Best local Similarity 100.0%; Pred. No. 4.3e-33;
DB	Matches 71; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY	1 MKITCVIYVAVLLITRCQILITADDSNGTQKHRLALRSPTLTLSMSTRCKGKGCPSRIAYNC 60
DB	1 MKITCVIYVAVLLITRCQILITADDSNGTQKHRLALRSPTLTLSMSTRCKGKGCPSRIAYNC 60
QY	61 CTGSCRSKGC 71
DB	61 CTGSCRSKGC 71
XX	
XX	RESULT 2
ID	ABB96634 standard; Peptide: 71 AA.
AC	ABB96634;
XX	
DT	12-JUL-2002 (first entry)
XX	
DE	Omega-conopeptide Cn6.7 propeptide.
XX	
KW	Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW	neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW	antimigraine; antidiabetic; tranquilliser; vulneraire; antipsychotic;
KW	anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW	neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW	stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW	drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW	migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW	psychosis; anxiety; schizophrenia.
OS	Conus consors.
XX	
XX	WO200207675-A2.
XX	
PD	31-JAN-2002.

XX	23-JUL-2001; 2001IWO-US23041.	
PF		
XX	21-JUL-2000; 2000US-219616P.	
PR	05-FEB-2001; 2001IUS-265888P.	
XX		
XX	(UTAH ) UNIV UTAH RES FOUND.	
PA	(COGN-) COGNEMIX INC.	
XX		
XX	Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;	
PI	Jacobsen R, Jones RM, Cartler GE;	
XX		
DR	WPI; 2002-257318/30.	
DR	N-PSDB; ABL98893.	
XX		
PT	New omega-conopeptides useful for treating disorders associated with	
PT	voltage gated ion channels e.g. pain, inflammation, neurological or	
PT	cardiovascular disorders -	
XX		
PS	Claim 1(c): Page 40; 195pp; English.	
XX		
CC	The invention relates to isolated omega-conopeptides, nucleic acid	
CC	sequences encoding them, and propeptide sequences. The activity of	
CC	the peptides of the invention may be described as, analgesic,	
CC	anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,	
CC	cardiovascular, antiinflammatory, antimigraine, antidiabetic,	
CC	tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.	
CC	Peptides of the invention act by modulating the activity of voltage gated	
CC	ion channels. They may be used for treating or preventing disorders	
CC	associated with voltage gated ion channels such as neurological	
CC	disorders, e.g. seizure (associated with epilepsy), neurotoxic injury	
CC	associated with conditions of hypoxia, anoxia, ischaemia, stroke,	
CC	cerebrovascular accident, brain or spinal chord trauma, drowning,	
CC	suifocation, perinatal asphyxia or hypoglycaemic events; pain e.g.	
CC	migraine; inflammation or cardiovascular disorders. They may also be used	
CC	for treating psychiatric disorders e.g. psychosis, anxiety or	
CC	schizophrenia. The analgesic agents of the invention show diminished side	
CC	effects and toxicity, and are non-addictive. The sequences given in	
CC	records ABB96595-ABB96697 represent omega-conopeptide propeptide	
CC	sequences.	
XX		
SQ	Sequence 71 AA;	
QY	Query Match 99.7%; Score 377; DB 23; Length 71;	
	Best Local Similarity 98.6%; Pred. No. 5.5e-33;	
	Matches 70; Conservative 1; Mismatches 0; Indels 0; Gaps 0.	
QY	1 MKLTGVYAVLLLTACQLTFADDSRGTOKHRALRSDTKLMSSTRCKGKGRCSRLAYNC 60	
Db	1 MKLTGVYAVLLLTACQLTFADDSRGTOKHRALRSDTKLMSSTRCKGKGRCSRLAYNC 60	
QY	61 CTGSCRSRGCG 71	
Db	61 CTGSCRSRGCG 71	
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ABB96629		
ID	ABB96629 standard; Peptide: 71 AA.	
XX		
AC	ABB96629;	
XX		
DT	12-JUL-2002 (first entry)	
XX		
DE	Omega-conopeptide Cn6.2 propeptide.	
XX		
XX	Omega-conopeptide; analgesic, anticonvulsant; vasotropic; cardiant;	
KW	neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;	
KW	antimigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;	
KW	anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;	
KW	neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;	
KW	stroke; cerebrovascular accident; brain trauma; spinal chord trauma;	
KW	drowning; suifocation; perinatal asphyxia; hypoglycaemic event; pain;	



KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
XX psychosis; anxiety; schizophrenia.  
OS Conus consors.  
XX WO200207675-A2.  
XX 31-JAN-2002.  
XX 23-JUL-2001; 2001WO-US23041.  
XX 21-JUL-2000; 2000US-219616P.  
PR 05-FEB-2001; 2001US-265888P.  
XX (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNETIX INC.  
XX Olvera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
PI Jacobsen R, Jones RM, Cartier GE;  
XX WPI: 2002-257318/30.  
DR N-PSDB; ABL98888.  
XX New omega-conopeptides useful for treating disorders associated with  
PT voltage gated ion channels e.g. pain, inflammation, neurological or  
PT cardiovascular disorders -  
XX  
PS Claim 1(c); Page 38; 195pp; English.  
XX The invention relates to isolated omega-conopeptides, nucleic acid  
CC sequences encoding them, and propeptide sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
CC tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders; anxiety or  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
CC sequences.  
XX  
SQ Sequence 71 AA;  
Query Match 99.5%; Score 376; DB 23; Length 71;  
Best Local Similarity 98.6%; Pred. No. 7e-33;  
Matches 70; Conservative 1; Mismatches 0; Indels 0; Gaps 0;  
OY 1 MKLTCVVIYAVLLTACQLITADDSRGTOKRALRSDFKLSSTCKGKGRCSRIAYNC 60  
DB 1 MKLTCVVIYAVLLTACQLITADDSRGTOKRALRSDFKLSSTCKGKGRCSRIAYNC 60  
OY 61 CTGSCRSKGC 71  
DB 61 CTGSCRSKGC 71  
RESULT 4  
ABB96680 standard; Peptide: 71 AA.  
ID ABB96680  
XX ABB96680;  
AC ABB96680;  
XX 12-JUL-2002 (first entry)  
DT Omega-conopeptide S6.3 propeptide.  
XX DE

XX Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KW antimigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;  
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KW psychosis; anxiety; schizophrenia.  
XX  
OS Conus striatus.  
XX WO200207675-A2.  
XX 31-JAN-2002.  
XX 23-JUL-2001; 2001WO-US23041.  
XX 21-JUL-2000; 2000US-219616P.  
PR 05-FEB-2001; 2001US-265888P.  
XX (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNETIX INC.  
XX Olvera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
PI Jacobsen R, Jones RM, Cartier GE;  
XX WPI: 2002-257318/30.  
DR N-PSDB; ABL98939.  
XX New omega-conopeptides useful for treating disorders associated with  
PT voltage gated ion channels e.g. pain, inflammation, neurological or  
PT cardiovascular disorders -  
XX  
PS Claim 1(c); Page 62; 195pp; English.  
XX The invention relates to isolated omega-conopeptides, nucleic acid  
CC sequences encoding them, and propeptide sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
CC cardiovascular, antinflammatory, antimigraine, antidiabetic,  
CC tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders; anxiety or  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
CC sequences.  
XX  
SQ Sequence 71 AA;  
Query Match 95.0%; Score 359; DB 23; Length 71;  
Best Local Similarity 95.8%; Pred. No. 4.5e-31;  
Matches 68; Conservative 0; Mismatches 3; Indels 0; Gaps 0;  
OY 1 MKLTCVVIYAVLLTACQLITADDSRGTOKRALRSDFKLSSTCKGKGRCSRIAYNC 60  
DB 1 MKLTCVVIYAVLLTACQLITADDSRGTOKRALRSDFKLSSTCKGKGRCSRIAYNC 60  
OY 61 CTGSCRSKGC 71  
DB 61 CTGSCRSKGC 71  
RESULT 5

XX	ID	AAV87541	standard: protein; 71 AA.
XX	AC	AAV87541;	
XX	DT	18-JUL-2000	(first entry)
XX	DE	Conotoxin peptide #11 precursor.	
XX	KM	Conotoxin precursor; brocade cone shell; line cone shell; drug screening;	
XX	KW	neuronal inhibitor; muscle inhibitor; analgesic.	
XX	OS	Conus sp.	
XX	FH	Key	Location/Qualifiers
XX	FT	Misc-difference 6	/note- "Encoded by ATG"
XX	PN	CNI237584-A.	
XX	PD	08-DEC-1999.	
XX	PF	30-APR-1999;	99CN-0106070.
XX	PR	30-APR-1999;	99CN-0106070.
XX	PA	(BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.	
XX	PI	Lu B, Huang P;	
XX	DR	MPi: 2000-351193/31.	
XX	DR	N-PSDB: AAA10463.	
XX	PT	Conotoxin peptide from brocade cone shells useful as analgesic -	
XX	XX	Claim 1A; Page 5-6; 20pp; Chinese.	
CC	XX	The invention relates to 14 novel mature conotoxin peptides from marine	
CC	CC	snails (Conus species); conotoxin precursor proteins; and cDNAs	
CC	CC	encoding the conotoxin precursors. The mature peptide sequences were	
CC	CC	discovered by obtaining conotoxin cDNA sequences from mRNA from the	
CC	CC	brocade cone shell (Conus textile) or the line cone shell (Conus	
CC	CC	striatus). The cDNA sequences were used to determine the conotoxin	
CC	CC	precursor protein sequences, and the sequences of the mature conotoxin	
CC	CC	peptides were inferred from the precursor sequences. The mature	
CC	CC	conotoxin peptides can be obtained via chemical synthesis or by in vitro	
CC	CC	gene expression. Conotoxins inhibit the function of neurons and muscle	
CC	CC	cells. Certain conotoxins interfere with synaptic transmission, while	
CC	CC	others act on muscle or at the neuromuscular junction. The 14 novel	
CC	CC	conotoxins have unique receptor specificity and affinity, so can be	
CC	CC	used as screening tools to identify new drugs. Conotoxin #11 (AAV87540)	
CC	CC	may be used for pain relief. Sequences AAV87421, AAV87523, AAV87525,	
CC	CC	AAV87527, AAV87528, AAV87531, AAV87533, AAV87535, AAV87537, AAV87539,	
CC	CC	AAV87541, AAV87543, AAV87545 and AAV87547 represent the precursors of	
CC	CC	conotoxins #1-#14, respectively.	
XX	XX		
SQ	Sequence	71 AA;	
QY	Query Match	94.2%;	Score 356; DB 21; Length 71;
QY	Best Local Similarity	94.4%;	Pred. NO. 9.5e-31;
QY	Matches 67; Conservative	0; Mismatches 4;	Indels 0; Gaps
DB	1 MKLTGVYIAVALLTACOLITADDSRGYQKHRLASDPTKLSMSTRCKGTGKPCSRIVNYNC	60	
QY	1 MKLTGVYIAVALLTACOLITADDSRGYQKHRLASDPTKLSMSTRCKGTGKPCSRIVNYNC	60	
DB	1 MKLTGVYIAVALLTACOLITADDSRGYQKHRLASDPTKLSMSTRCKGTGKPCSRIVNYNC	60	
QY	61 CTGSCRSRSGCG 71		
DB	61 CTGSCRSRSGCG 71		
RESULT 6			
ABB96607			

ID	ABB96607 standard; Peptide: 71 AA.
XX	ABB96607;
AC	
XX	
DT	12-JUL-2002 (first entry)
XX	
DE	Omega-conopeptide Ay6.1 propeptide.
XX	
XX	Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KM	neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KM	antimigraine; antidiabetic; tranquiliser; vulnerability; antipsychotic;
KM	anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KM	neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KM	stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KM	drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KM	migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KM	psychosis; anxiety; schizophrenia.
XX	
OS	Conus aurisilacus.
XX	
PN	WO200207675-A2.
XX	
XX	31-JAN-2002.
PD	
XX	23-JUL-2001; 2001WO-US23041.
PF	
XX	21-JUL-2000; 2000US-219616P.
PR	05-FEB-2001; 2001US-265888P.
XX	
PA	(UTAH ) UNITV UTAH RES FOUND.
PA	(COGN-) COGNETIX INC.
PI	Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI	Jacobsen R, Jones RM, Cartier GE;
XX	
DR	WPI: 2002-257318/30.
DR	N-PsDB; ABL98867.
PT	New omega-conopeptides useful for treating disorders associated with
PT	voltage gated ion channels e.g. pain, inflammation, neurological or
PT	cardiovascular disorders -
XX	
PS	Claim 1(c); Page 28; 195pp; English.
XX	
XX	The invention relates to isolated omega-conopeptides, nucleic acid
CC	sequences encoding them, and propeptide sequences. The activity of
CC	the peptides of the invention may be described as, analgesic.
CC	anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC	cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC	tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC	Peptides of the invention act by modulating the activity of voltage gated
CC	ion channels. They may be used for treating or preventing disorders
CC	associated with voltage gated ion channels such as neurological
CC	disorders, e.g. seizure (associated with epilepsia), neurotoxic injury
CC	associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC	cerebrovascular accident, brain or spinal chord trauma, drowning,
CC	suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC	migraine; inflammation or cardiovascular disorders. They may also be used
CC	for treating psychiatric disorders e.g. psychosis, anxiety or
CC	schizophrenia. The analgesic agents of the invention show diminished side
CC	effects and toxicity, and are non-addictive. The sequences given in
CC	records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC	sequences.
XX	
XX	
SO	Sequence 71 AA:
	Query Match 93.1%; Score 352; DB 23; Length 71:
	Best Local Similarity 93.0%; Pred. No. 2,5e-30;
	Matches 66; Conservative 2; Mismatches 3; Indels 0; Gaps 0
QY	1 MKLTCVIVAVLLTACOLITADSRSTQKRRALRSPDKLSMSTRCKGTGKPCSR1AYNC 60
	1 MKLTCVIVAVVAVLLTACOLITADSRSTQKRRALRSPDKLSMSTRCKGTGKPCSR1AYNC 60
DB	1 MKLTCVIVAVVAVLLTACOLITADSRSTQKRRALRSPDKLSMSTRCKGTGKPCSR1AYNC 60

OY 61 CTGSCRSKCG 71  
 |||||  
 Db 61 CTGSCRSKCG 71

## RESULT 7

ABB96661  
 ID ABB96661 standard; Peptide: 71 AA.

XX AC ABB96661;

XX DF 12-JUL-2002 (first entry)

XX DE Omega-conopeptide Mn6.1 propeptide.

XX KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;  
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.

XX OS Conus monachus.

XX PN W0200207675-A2.

XX PD 31-JAN-2002.

XX PF 23-JUL-2001; 2001WO-US23041.

XX PR 21-JUL-2000; 2000US-219616P.

XX PR 05-FEB-2001; 2001US-265888P.

XX PA (UTAH ) UNIV UTAH RES FOUND.

XX PA (COGN-) COGNEXIX INC.

XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

XX PI Jacobson R, Jones RM, Cartier GE;

XX DR MPI; 2002-257318/30.

XX DR N-PSDB; ABL98920.

XX PS Claim 1(c); Page 53; 195pp; English.

XX CC The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as, analgesic,  
 CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine, inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96695-ABB96697 represent omega-conopeptide propeptide  
 CC sequences.

XX Sequence 71 AA;

Query Match 92.6%; Score 350; DB 23; Length 71;  
 Best Local Similarity 94.4%; Pred. No. 4.1e-30;  
 Matches 67; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

OY 1 MKLTCVIVAVLLTACQLITADDSRGTKHRLASDTKLSMSTRCKGTGKPCSRIVNC 60  
 |||||  
 Db 1 MKLTSVIVAVLLTACQLITADDSRGTKHRLASDTKLSMSTRCKGTGKPCSRIVNC 60

OY 61 CTGSCRSKCG 71  
 |||||

Db 61 CTGSCRSKCG 71

RESULT 8  
 ABB96609  
 ID ABB96609 standard; Peptide: 71 AA.

XX AC ABB96609;

XX DF 12-JUL-2002 (first entry)

XX DE Omega-conopeptide Ay6.3 propeptide.

XX KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;  
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.

XX OS Conus auristiacus.

XX PN W0200207675-A2.

XX PD 31-JAN-2002.

XX PF 23-JUL-2001; 2001WO-US23041.

XX PR 21-JUL-2000; 2000US-219616P.

XX PR 05-FEB-2001; 2001US-265888P.

XX PA (UTAH ) UNIV UTAH RES FOUND.

XX PA (COGN-) COGNEXIX INC.

XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

XX PI Jacobson R, Jones RM, Cartier GE;

XX DR MPI; 2002-257318/30.

XX DR N-PSDB; ABL98869.

XX PS Claim 1(c); Page 29; 195pp; English.

XX CC The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as, analgesic,  
 CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.

CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
 CC sequences.

XX SQ Sequence 71 AA;

Query Match 92.3%; Score 349; DB 23; Length 71;

Best Local Similarity 93.0%; Pred. No. 5.3e-30; Indels 0; Gaps 0;

Matches 66; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

QY 1 MKLTCVAVVAVLLTACQLITADDSRGTKHRAKLSPTKLSMSTRCKGKPCSRIVANC 60

DB 1 MKLTCVAVVAVLLTACQLITADDSRGTKHRAKLSPTKLSMSTRCKGKPCSRIVANC 60

QY 61 CTGSCRSKCG 71

DB 61 CTGSCRSKCG 71

RESULT 9

ABB96632 standard; Peptide; 71 AA.

ABB96632:

12-JUL-2002 (first entry)

Omega-conopeptide Cn6.5 propeptide.

KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 KW antinigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;  
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.

OS Conus consors.

WO200207675-A2.

31-JAN-2002.

23-JUL-2001; 2001WO-US23041.

21-JUL-2000; 2000US-219616P.

05-FEB-2001; 2001US-265888P.

(UTAH ) UNIV UTAH RES FOUND.

(COGN-) COGNETIX INC.

Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

Jacobsen R, Jones RM, Cartier GE;

WPI: 2002-257318/30.

N-PSDB; ABL98891.

New omega-conopeptides useful for treating disorders associated with

voltage gated ion channels e.g. pain, inflammation, neurological or

cardiovascular disorders -

Claim 1(c): Page 39; 195pp; English.

The invention relates to isolated omega-conopeptides, nucleic acid

sequences encoding them, and propeptide sequences. The activity of

the peptides of the invention may be described as, analgesic,

anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,

cardiovascular, antiinflammatory, antinigraine, antidiabetic,

CC tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
 CC sequences.

XX SQ Sequence 71 AA;

Query Match 86.5%; Score 327; DB 23; Length 71;

Best Local Similarity 85.9%; Pred. No. 1.2e-27; Indels 0; Gaps 0;

Matches 61; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

QY 1 MKLTCVAVVAVLLTACQLITADDSRGTKHRAKLSPTKLSMSTRCKGKPCSRIVANC 60

DB 1 MKLTCVAVVAVLLTACQLITADDSRGTKHRAKLSPTKLSMSTRCKGKPCSRIVANC 60

QY 61 CTGSCRSKCG 71

DB 61 CTGSCRSKCG 71

RESULT 10

AAR38795 standard; Peptide; 71 AA.

AAR38795:

22-FEB-1994 (first entry)

Conotoxin prepropeptide MWIIB.

Calcium channel; four loop; toxin; MWIIB; Conus magus; GVIA; neurone;

C. geographus; conotoxin; presynaptic; specificity; calcium target;

cysteine; omega; framework; template domain.

OS Conus magus.

US5231011-A.

27-JUL-1993.

18-APR-1991; 91US-0689693.

18-APR-1991; 91US-0689693.

(UTAH ) UNIV UTAH.

Hillyard DR, Olivera BM;

WPI: 1993-249725/31.

Formation of cysteine-rich peptide of specified di: sulphide bonding -

involves forming pre-pro-peptide with N-terminal excised region which

acts as templates for directing di: sulphide bond formation in

cysteine-rich peptide

Example 1; Column 8; 15pp; English.

The sequences given in AAR38795-96 represent two examples of calcium

channel four loop toxins. They are MWIIB from Conus magus and GVIA

CC from C. geographus. These conotoxins target presynaptic calcium  
CC channels and have largely overlapping specificities for different  
CC calcium targets in neuronal tissue preparations. These peptides  
CC form a four loop folded toxin molecule with a specific arrangement of  
CC cysteines referred to as the omega pattern. The cysteine framework  
CC of the two peptides differs only in the exact amino acid spacing  
CC of the two carboxy terminal inter-Cys domains. Beyond the similarity  
CC of the framework the two peptides are remarkably divergent. Only nine  
CC of the 21 non-Cys amino acids of the omega-CVIA are conserved in the  
CC omega-WVIIA. VIIIB and CVIA template domains are each 45 amino acids  
CC in length. They also show a >90% conservation of amino acid sequence  
CC with only 4 positions of amino acid non-identity. These two sequences  
CC illustrate the existence of two highly conserved template domains  
CC associated with two structurally dissimilar toxins.

SQ Sequence 71 AA:

Query Match 85.7%; Score 324; DB 14; Length 71;

Best Local Similarity 85.9%; Pred. No. 2.4e-27; Mismatches 8; Indels 0; Gaps 0;

Matches 61; Conservative 2; Mismatches 8; Indels 0; Gaps 0;

QY 1 MKLTGVIVAVLLTACQLITADDSRGTQKRRALRSPTKLSMSTRCKGSKGASCHRTSYDC 60  
DB 1 MKLTGVIVAVLLTACQLITADDSRGTQKRRALRSPTKLSMSTRCKGSKGASCHRTSYDC 60

QY 61 CTGSCRSKCG 71  
DB 61 CTGSCNRKCG 71

RESULT 11

ID ABB96662 standard; Peptide: 71 AA.

XX ABB96662;

DT 12-JUL-2002 (first entry)

XX Omega-conopeptide Mn6.2 propeptide.

KW Omega-conopeptide; analgesic; anticonvulsant; vasotrophic; cardiant;  
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;  
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KW psychosis; anxiety; schizophrenia.

XX Conus monachus.

XX WO200207675-A2.

XX 31-JAN-2002.

XX 23-JUL-2001; 2001WO-US23041.

XX 21-JUL-2000; 2000US-219616P.

XX 05-FEB-2001; 2001US-265888P.

XX (UTAH ) UNIV UTAH RES FOUND.

XX (COGN-) COGNETIX INC.

XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

XX N-PSDB; ABL98921.

XX MPI; 2002-257318/30.

XX New omega-conopeptides useful for treating disorders associated with  
XX voltage gated ion channels e.g. pain, inflammation, neurological or  
XX cardiovascular disorders -

XX Claim 1(c); Page 54; 195pp; English.

PS The invention relates to isolated omega-conopeptides, nucleic acid  
XX sequences encoding them, and propeptide sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotrophic, cardiant, neuroprotective, cerebroprotective,  
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders. They may also be used  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
CC sequences.

SQ Sequence 71 AA:

Query Match 85.7%; Score 324; DB 23; Length 71;

Best Local Similarity 87.3%; Pred. No. 2.4e-27; Mismatches 9; Indels 0; Gaps 0;

Matches 62; Conservative 0; Mismatches 9; Indels 0; Gaps 0;

QY 1 MKLTGVIVAVLLTACQLITADDSRGTQKRRALRSPTKLSMSTRCKGSKGASCHRTSYDC 60  
DB 1 MKLTGVIVAVLLTACQLITADDSRGTQKRRALRSPTKLSMSTRCKGSKGASCHRTSYDC 60

QY 61 CTGSCRSKCG 71  
DB 61 CTGSCNRKCG 71

RESULT 12

ID ABB96659 standard; Peptide: 71 AA.

XX ABB96659;

DT 12-JUL-2002 (first entry)

XX Omega-conopeptide w-WVIIB propeptide.

KW Omega-conopeptide; analgesic; anticonvulsant; vasotrophic; cardiant;  
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;  
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KW psychosis; anxiety; schizophrenia.

XX Conus magus.

XX WO200207675-A2.

XX 31-JAN-2002.

XX 23-JUL-2001; 2001WO-US23041.

XX 21-JUL-2000; 2000US-219616P.

XX 05-FEB-2001; 2001US-265888P.

XX (UTAH ) UNIV UTAH RES FOUND.

XX (COGN-) COGNETIX INC.

XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

PI Jacobsen R, Jones RM, Cartier GE;  
 XX WPI: 2002-257318/30.  
 DR N-PSDB; ABL98918.  
 XX  
 PT New omega-conopeptides useful for treating disorders associated with  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 PT cardiovascular disorders -  
 XX  
 XX  
 PS Claim 1(c); Page 52; 195pp; English.  
 CC The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as: analgesic,  
 CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antinflammatory, antipsychotic, anxiolytic, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96395-ABB9697 represent omega-conopeptide propeptide  
 CC sequences.  
 XX  
 SQ Sequence 71 AA;  
 QY Query Match 84.4%; Score 319; DB 23; Length 71;  
 Db Best Local Similarity 85.9%; Pred. No. 8.2e-27;  
 Matches 61; Conservative 2; Mismatches 8; Indels 0; Gaps 0;  
 QY 1 MKLTCVYIVAVLLTACQLITADDSRGTKHRAISRDTKLSMSTRCKGKGRCSRIAYNC 60  
 Db 1 MKLTCVYIVAVLLTACQLITADDSRGTKHRAISRDTKLSMSTRCKGKGRCSRIAYNC 60  
 QY 61 CTGSCRSKGC 71  
 Db 61 CTGSCNKGKFG 71  
 Db  
 RESULT 13  
 ABB96631 standard; Peptide: 73 AA.  
 ID ABB96631  
 AC ABB96631;  
 XX  
 DT 12-JUL-2002 (first entry)  
 DE Omega-conopeptide Cn6.4 propeptide.  
 XX  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antinflammatory;  
 KW antidiabetic; tranquiliser; vulnerary; antipsychotic;  
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.  
 XX  
 OS Conus consors.  
 XX  
 PN W0200207675-A2.  
 XX  
 PD 31-JAN-2002.  
 XX  
 PF 23-JUL-2001; 2001WO-US23041.

XX 21-JUL-2000; 2000US-219616P.  
 PR 05-FEB-2001; 2001US-265888P.  
 XX  
 PA (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN ) COGNETIX INC.  
 PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobsen R, Jones RM, Cartier GE;  
 XX  
 DR WPI: 2002-257318/30.  
 DR N-PSDB; ABL98890.  
 XX  
 PT New omega-conopeptides useful for treating disorders associated with  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 PT cardiovascular disorders -  
 XX  
 XX  
 PS Claim 1(c); Page 39; 195pp; English.  
 CC The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as: analgesic,  
 CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antinflammatory, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96395-ABB9697 represent omega-conopeptide propeptide  
 CC sequences.  
 XX  
 SQ Sequence 73 AA;  
 QY Query Match 83.1%; Score 314; DB 23; Length 73;  
 Db Best Local Similarity 82.2%; Pred. No. 2.9e-26;  
 Matches 60; Conservative 5; Mismatches 6; Indels 2; Gaps 1;  
 QY 1 MKLTCVYIVAVLLTACQLITADDSRGTKHRAISRDTKLSMSTRCKGKGRCSRIAYNC 60  
 Db 1 MKLTCVYIVAVLLTACQLITADDSRGTKHRAISRDTKLSMSTRCKGKGRCSRIAYNC 60  
 QY 61 CTGSCRS--GKGC 71  
 Db 61 CHGSCSSSKGRCG 73  
 Db  
 RESULT 14  
 ABB96624 standard; Peptide: 71 AA.  
 ID ABB96624  
 AC ABB96624;  
 XX  
 DT 12-JUL-2002 (first entry)  
 DE Omega-conopeptide Cr6.1 propeptide.  
 XX  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antinflammatory;  
 KW antidiabetic; tranquiliser; vulnerary; antipsychotic;  
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.

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XX OS Conus circumcinctus.
XX PM WO200207675-A2.
XX PD 31-JAN-2002.
XX PF 23-JUL-2001; 2001WO-US23041.
XX PR 21-JUL-2000; 2000US-219616P.
XX PR 05-FEB-2001; 2001US-265888P.
XX PA (UTAH) UNIV UTAH RES FOUND.
XX PA (COGN-) COGNEXIX INC.
XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
XX PI Jacobsen R, Jones RM, Cartier GE;
XX DR WPI; 2002-257318/30.
XX DR N-PSDB; ABL98883.
XX PT New omega-conopeptides useful for treating disorders associated with
XX PT voltage gated ion channels e.g. pain, inflammation, neurological or
XX PT cardiovascular disorders -
XX PS Claim 1(c); Page 36; 195pp; English.
XX CC The invention relates to isolated omega-conopeptides, nucleic acid
XX CC sequences encoding them, and propeptide sequences. The activity of
XX CC the peptides of the invention may be described as, analgesic,
XX CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
XX CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
XX CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
XX CC Peptides of the invention act by modulating the activity of voltage gated
XX CC ion channels. They may be used for treating or preventing disorders
XX CC associated with voltage gated ion channels such as neurological
XX CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
XX CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
XX CC cerebrovascular accident, brain or spinal chord trauma, drowning,
XX CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
XX CC migraine; inflammation or cardiovascular disorders. They may also be used
XX CC for treating psychiatric disorders e.g. psychosis, anxiety or
XX CC schizophrenia. The analgesic agents of the invention show diminished side
XX CC effects and toxicity, and are non-addictive. The sequences given in
XX CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
XX CC sequences.
XX SQ Sequence 71 AA;
XX
XX Query Match 82.3%; Score 311; DB-23; Length 71;
XX Best Local Similarity 80.3%; Pred. No. 5.8e-26;
XX Matches 57; Conservative 5; Mismatches 9; Indels 0; Gaps 0;
XX
XX QY 1 MKLTCVIVAVALLTACOLITADDSRGTKQKRALSDTKLSMSTRCKGTGKPSRIAYNC 60
XX DB 1 MKLTCVIVAVALLTACOLITADDSRGTKQKRALSDTKLSMSTRCKGTGKPSRIAYNC 60
XX
XX QY 61 CTGSCRSGKCG 71
XX DB 61 CSGSGSGTGRCG 71
XX
XX RESULT 15
XX ABB96675
XX ID ABB96675 standard; Peptide: 73 AA.
XX AC ABB96675;
XX DF 12-JUL-2002 (first entry)
XX DE Omega-conopeptide Sm6.1 propeptide.
XX KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;

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KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channels; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX OS Conus stercusmuscarum.
XX PM WO200207675-A2.
XX PD 31-JAN-2002.
XX PF 23-JUL-2001; 2001WO-US23041.
XX PR 21-JUL-2000; 2000US-219616P.
XX PR 05-FEB-2001; 2001US-265888P.
XX PA (UTAH) UNIV UTAH RES FOUND.
XX PA (COGN-) COGNEXIX INC.
XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
XX PI Jacobsen R, Jones RM, Cartier GE;
XX DR WPI; 2002-257318/30.
XX DR N-PSDB; ABL98934.
XX PT New omega-conopeptides useful for treating disorders associated with
XX PT voltage gated ion channels e.g. pain, inflammation, neurological or
XX PT cardiovascular disorders -
XX PS Claim 1(c); Page 60; 195pp; English.
XX CC The invention relates to isolated omega-conopeptides, nucleic acid
XX CC sequences encoding them, and propeptide sequences. The activity of
XX CC the peptides of the invention may be described as, analgesic,
XX CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
XX CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
XX CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
XX CC Peptides of the invention act by modulating the activity of voltage gated
XX CC ion channels. They may be used for treating or preventing disorders
XX CC associated with voltage gated ion channels such as neurological
XX CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
XX CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
XX CC cerebrovascular accident, brain or spinal chord trauma, drowning,
XX CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
XX CC migraine; inflammation or cardiovascular disorders. They may also be used
XX CC for treating psychiatric disorders e.g. psychosis, anxiety or
XX CC schizophrenia. The analgesic agents of the invention show diminished side
XX CC effects and toxicity, and are non-addictive. The sequences given in
XX CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
XX CC sequences.
XX SQ Sequence 73 AA;
XX
XX Query Match 81.0%; Score 306; DB-23; Length 73;
XX Best Local Similarity 80.8%; Pred. No. 2.1e-25;
XX Matches 59; Conservative 5; Mismatches 7; Indels 2; Gaps 1;
XX
XX QY 1 MKLTCVIVAVALLTACOLITADDSRGTKQKRALSDTKLSMSTRCKGTGKPSRIAYNC 60
XX DB 1 MKLTCVIVAVALLTACOLITADDSRGTKQKRALSDTKLSMSTRCKGTGKPSRIAYNC 60
XX
XX QY 61 CTGSCR--SGKCG 71
XX DB 61 CSGSGSGTGRCG 73
XX
XX Search completed: July 1, 2003, 10:51:19
XX Job time : 74.2188 secs

```

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GenCore version 5.1.6  
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## OM protein - protein search, using sw model

Run on: July 1, 2003, 10:49:37 ; Search time 17.75 Seconds  
(without alignments)  
117.692 Million cell updates/sec

Title: US-09-910-082a-190  
Perfect score: 378  
Sequence: 1 MKLTCVIVAVILFTACOLI.....PCSRIVNCTGCRGRCG 71

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%

Listing first 45 summaries

## Database :

Issued\_Patents\_AA:\*  
1: /cgn2\_6/ptodata/1/1aa/5A.COMB.pep:\*  
2: /cgn2\_6/ptodata/1/1aa/5B.COMB.pep:\*  
3: /cgn2\_6/ptodata/1/1aa/6A.COMB.pep:\*  
4: /cgn2\_6/ptodata/1/1aa/6B.COMB.pep:\*  
5: /cgn2\_6/ptodata/1/1aa/PTUS.COMB.pep:\*  
6: /cgn2\_6/ptodata/1/1aa/backfiles1.pep:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	330	87.3	71	1	US-07-689-693B-1
2	259.5	68.7	73	1	US-07-689-693B-3
3	259.5	68.7	73	1	US-08-624-123-12
4	259.5	68.7	73	5	PCT-US96-05262-13
5	219	57.9	45	1	US-07-689-693B-19
6	198	52.4	45	1	US-07-689-693B-20
7	135.5	35.8	78	1	US-07-689-693B-5
8	135.5	35.8	78	1	US-08-624-123-13
9	135.5	35.8	78	2	US-08-716-308-2
10	135.5	35.8	78	2	US-08-716-308-16
11	135.5	35.8	78	5	PCT-US96-05262-14
12	135	35.7	77	2	US-08-716-308-17
13	134	35.4	77	1	US-07-689-693B-7
14	128	33.9	26	1	US-08-049-794-11
15	128	33.9	26	1	US-08-496-847-11
16	128	33.9	26	2	US-08-742-774-11
17	128	33.9	26	2	US-08-675-354-11
18	128	33.9	26	2	US-08-965-918-11
19	128	33.9	26	3	US-09-138-439-11
20	128	33.9	26	3	US-08-613-400A-11
21	128	33.9	26	4	US-09-392-979A-11
22	128	33.9	26	4	US-09-392-979A-11
23	128	33.9	26	1	US-08-716-308-18
24	127	33.6	26	1	US-07-789-913-11
25	127	33.6	27	1	US-07-789-913-14
26	126	33.3	25	1	US-08-496-847-35
27	126	33.3	25	2	US-08-965-918-35

28	126	33.3	25	3	US-08-613-400A-35	Sequence 35, Appl
29	126	33.3	81	1	US-08-624-123-10	Sequence 10, Appl
30	126	33.3	81	5	PCT-US96-05262-5	Sequence 5, Appl
31	123	32.5	25	1	US-08-049-794-12	Sequence 12, Appl
32	123	32.5	25	1	US-08-496-847-12	Sequence 12, Appl
33	123	32.5	25	1	US-08-742-774-12	Sequence 12, Appl
34	123	32.5	25	2	US-08-675-354-12	Sequence 12, Appl
35	123	32.5	25	2	US-08-965-918-12	Sequence 12, Appl
36	123	32.5	25	3	US-09-138-439-12	Sequence 12, Appl
37	123	32.5	25	2	US-08-613-400A-12	Sequence 12, Appl
38	123	32.5	25	3	US-09-298-017-12	Sequence 12, Appl
39	123	32.5	25	4	US-09-392-979A-12	Sequence 12, Appl
40	123	32.5	27	1	US-08-049-794-14	Sequence 14, Appl
41	123	32.5	27	1	US-08-496-847-14	Sequence 14, Appl
42	123	32.5	27	2	US-08-742-774-14	Sequence 14, Appl
43	123	32.5	27	2	US-08-675-354-14	Sequence 14, Appl
44	123	32.5	27	2	US-08-965-918-14	Sequence 14, Appl
45	123	32.5	27	2	US-09-138-439-14	Sequence 14, Appl

## ALIGNMENTS.

RESULT 1  
US-07-689-693B-1  
Sequence 1, Application US/07689693B  
Patent No. 5231011  
GENERAL INFORMATION:  
APPLICANT: David Hillyard  
APPLICANT: Baldomero M. Olivera  
TITLE OF INVENTION: Segregated Folding Determinants  
TITLE OF INVENTION: for Small Disulfide-Rich Peptides  
NUMBER OF SEQUENCES: 25  
CORRESPONDENCE ADDRESS:  
ADDRESSER: Thorpe, No. 5231011h & Western  
STREET: 9035 South 700 East, Suite 200  
CITY: Sandy  
STATE: Utah  
COUNTRY: USA  
ZIP: 84070  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage  
COMPUTER: Compaq LTE/286  
OPERATING SYSTEM: DOS 4.01  
SOFTWARE: Word Perfect 5.1  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/689,693B  
FILING DATE: 19910418  
CLASSIFICATION: 530  
PRIORITY APPLICATION DATA:  
APPLICATION NUMBER: none  
FILING DATE: na  
ATTORNEY/AGENT INFORMATION:  
NAME: Western, M. Wayne  
REGISTRATION NUMBER: 22,788  
REFERENCE/DOCKET NUMBER: 9925  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (801) 566-6633  
TELEFAX: (801) 566-0750  
INFORMATION FOR SEQ ID NO: 1:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 71 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: linear  
MOLECULE TYPE: peptide  
FEATURE:  
NAME/KEY: Prepropeptide sequence for four-loop  
NAME/KEY: With Omega conotoxin from Conus magus.  
IDENTIFICATION METHOD: Libraries were created  
IDENTIFICATION METHOD: using oligo-dT primed pUC13 vector  
US-07-689-693B-1  
Query Match 87.3%; Score 330; DB 1; Length 71;



APPLICANT: Hillyard, David R.  
TITLE OF INVENTION: Conotoxin Peptides  
NUMBER OF SEQUENCES: 14  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Venable, Baetjer, Howard & Civiletti, LLP  
STREET: 1201 New York Avenue, N.W., Suite 1000  
CITY: Washington  
STATE: DC  
COUNTRY: U.S.A.  
ZIP: 20005  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patent Release #1.0, Version #1.30  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: PCT/US96/05262  
FILING DATE: 17-APR-1996  
CLASSIFICATION:  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 08/423,561  
FILING DATE: 17-APR-1995  
ATTORNEY/AGENT INFORMATION:  
NAME: Saxe, Stephen A.  
REGISTRATION NUMBER: 38,609  
REFERENCE/DOCKET NUMBER: 24260-107674  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 202-962-4848  
TELEFAX: 202-962-8300  
INFORMATION FOR SEQ ID NO: 13:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 73 amino acids  
TYPE: amino acid  
STRANDEDNESS: single  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
PCT-US96-05262-13

Query Match 68.7%; Score 259.5; DB 5; Length 73;  
Best Local Similarity 80.0%; Pred. No. 2.5e-21;  
Matches 52; Conservative 3; Mismatches 9; Indels 1; Gaps 1;

QY 1 MKLTCVIVAVLLTACQLITADSDRGOKHRLRSDPKLSMSTRCGTGKPCGRIVNC 60  
Db 1 MKLTCVIVAVLLTACQLITADSDRGOKHRLRSDPKLSMSTRCGTGKPCGRIVNC 60

QY 61 CTGSC 65  
Db 61 CR-SC 64

RESULT 5  
US-07-689-693B-19  
Sequence 19, Application US/07689693B  
Patent No. 5231011  
GENERAL INFORMATION:  
APPLICANT: David Hillyard  
APPLICANT: Baldomero M. Olivera  
TITLE OF INVENTION: Segregated Folding Determinants  
TITLE OF INVENTION: for Small Disulfide-Rich Peptides  
NUMBER OF SEQUENCES: 25  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Thorpe, No. 5231011th & Western  
STREET: 9035 South 700 East, Suite 200  
CITY: Sandy  
STATE: Utah  
COUNTRY: USA  
ZIP: 84070  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage  
COMPUTER: Compaq LITE/286  
OPERATING SYSTEM: DOS 4.01

SOFTWARE: Word Perfect 5.1  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/689,693B  
FILING DATE: 19910418  
CLASSIFICATION: 530  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: none  
FILING DATE: na  
ATTORNEY/AGENT INFORMATION:  
NAME: Western, M. Wayne  
REGISTRATION NUMBER: 22,788  
REFERENCE/DOCKET NUMBER: 9925  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (801) 566-6633  
TELEFAX: (801) 566-0750  
INFORMATION FOR SEQ ID NO: 19:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 45 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: linear  
MOLECULE TYPE: peptide  
FEATURE:  
NAME/KEY: Signal/Pro sequence for synthesis of  
NAME/KEY: four-loop MVLII Omega conotoxin  
IDENTIFICATION METHOD: Libraries were created  
IDENTIFICATION METHOD: using oligo-dt primed pUC13 vector  
US-07-689-693B-19

Query Match 57.9%; Score 219; DB 1; Length 45;  
Best Local Similarity 100.0%; Pred. No. 3.4e-17;  
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MKLTCVIVAVLLTACQLITADSDRGOKHRLRSDPKLSMSTR 45  
Db 1 MKLTCVIVAVLLTACQLITADSDRGOKHRLRSDPKLSMSTR 45

RESULT 6  
US-07-689-693B-20  
Sequence 20, Application US/07689693B  
Patent No. 5231011  
GENERAL INFORMATION:  
APPLICANT: David Hillyard  
APPLICANT: Baldomero M. Olivera  
TITLE OF INVENTION: Segregated Folding Determinants  
TITLE OF INVENTION: for Small Disulfide-Rich Peptides  
NUMBER OF SEQUENCES: 25  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Thorpe, No. 5231011th & Western  
STREET: 9035 South 700 East, Suite 200  
CITY: Sandy  
STATE: Utah  
COUNTRY: USA  
ZIP: 84070  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage  
COMPUTER: Compaq LITE/286  
OPERATING SYSTEM: DOS 4.01  
SOFTWARE: Word Perfect 5.1  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/689,693B  
FILING DATE: 19910418  
CLASSIFICATION: 530  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: none  
FILING DATE: na  
ATTORNEY/AGENT INFORMATION:  
NAME: Western, M. Wayne  
REGISTRATION NUMBER: 22,788  
REFERENCE/DOCKET NUMBER: 9925  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (801) 566-6633  
TELEFAX: (801) 566-0750

INFORMATION FOR SEQ ID NO: 20:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 45 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: linear  
MOLECULE TYPE: peptide  
FEATURE:  
NAME/KEY: Signal/Pro sequence for synthesis of  
NAME/KEY: four-loop GVIA Omega conotoxin  
IDENTIFICATION METHOD: Libraries were created  
IDENTIFICATION METHOD: using oligo-dT primed pUC13 vector  
US-07-689-693B-20

Query Match 52.4%; Score 198; DB 1; Length 45;  
Best Local Similarity 91.1%; Pred. No. 6.2e-15;  
Matches 41; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

OY 1 MKLTCVIVAVLLTACQLITADDSRGTKHRLRSDTKLSMSTR 45  
DB 1 MKLTCVIVAVLLTACQLITADDSRGTKHRLRSDTKLSMSTR 45

RESULT 7  
US-07-689-693B-5  
Sequence 5, Application US/07689693B  
Patent No. 5231011  
GENERAL INFORMATION:  
APPLICANT: David Hillyard  
APPLICANT: Baldomero M. Olivera  
TITLE OF INVENTION: Segregated Folding Determinants  
TITLE OF INVENTION: for Small Disulfide-Rich Peptides  
NUMBER OF SEQUENCES: 25  
CORRESPONDENCE ADDRESS:  
ADDRESS: Thorpe, No. 5231011th & Western  
STREET: 9035 South 700 East, Suite 200  
CITY: Sandy  
STATE: Utah  
COUNTRY: USA  
ZIP: 84070  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette, 3.5 inch, 720 KB storage  
COMPUTER: Compaq LTE/286  
OPERATING SYSTEM: DOS 4.01  
SOFTWARE: Word Perfect 5.1  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/689, 693B  
FILING DATE: 19910418  
CLASSIFICATION: 530  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: none  
FILING DATE: na  
ATTORNEY/AGENT INFORMATION:  
NAME: Western, M. Wayne  
REGISTRATION NUMBER: 22,788  
REFERENCE/DOCKET NUMBER: 9925  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (801) 566-6633  
TELEFAX: (801) 566-0750  
INFORMATION FOR SEQ ID NO: 5:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 78 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: linear  
MOLECULE TYPE: peptide  
FEATURE:  
NAME/KEY: Prepropeptide sequence for four loop  
IDENTIFICATION METHOD: Library was constructed  
IDENTIFICATION METHOD: using polyA selected mRNA transcripts purified  
IDENTIFICATION METHOD: from Conus textile venom duct tissue and cloned  
IDENTIFICATION METHOD: into the Oxyama-Berg oligo-dT primed plasmid  
IDENTIFICATION METHOD: pSV7186.  
US-07-689-693B-5

Query Match 35.8%; Score 135.5; DB 1; Length 78;  
Best Local Similarity 40.3%; Pred. No. 5.8e-08;  
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

OY 1 MKLTCVIVAVLLTACQLITADDSRG-----TKHRLRSDTKLSMSTR-CKGGRKC 53  
DB 1 MKLTCVIVAVLLTACQLITADDSRG-----TKHRLRSDTKLSMSTR-CKGGRKC 53

RESULT 8  
US-08-624-123-13  
Sequence 13, Application US/08624123  
Patent No. 5739276  
GENERAL INFORMATION:  
APPLICANT: Shon, Ki-Joon  
APPLICANT: Grille, Michelle M.  
APPLICANT: Olivera, Baldomero M.  
TITLE OF INVENTION: Conotoxin Peptides  
NUMBER OF SEQUENCES: 13  
CORRESPONDENCE ADDRESS:  
ADDRESS: Venable, Baetjer, Howard & Civiletti  
STREET: 1201 New York Avenue N.W.  
CITY: Washington  
STATE: DC  
COUNTRY: US  
ZIP: 20005  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.30  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/624,123  
FILING DATE:  
CLASSIFICATION: 530  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 08/319,554  
FILING DATE: 07-OCT-1994  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 08/423,561  
FILING DATE: 17-APR-1995  
ATTORNEY/AGENT INFORMATION:  
NAME: Ihnen, Jeffrey L.  
REGISTRATION NUMBER: 28,957  
REFERENCE/DOCKET NUMBER: 24260-107674-5  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 202-962-4810  
TELEFAX: 202-962-8300  
INFORMATION FOR SEQ ID NO: 13:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 78 amino acids  
TYPE: amino acid  
STRANDEDNESS: single  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
US-08-624-123-13

Query Match 35.8%; Score 135.5; DB 1; Length 78;  
Best Local Similarity 40.3%; Pred. No. 5.8e-08;  
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

OY 1 MKLTCVIVAVLLTACQLITADDSRG-----TKHRLRSDTKLSMSTR-CKGGRKC 53  
DB 1 MKLTCVIVAVLLTACQLITADDSRG-----TKHRLRSDTKLSMSTR-CKGGRKC 53

OY 54 SRIVNCTGSC 65  
DB 61 NLDPNCCDGYC 72

DB 61 NILDQNCDDGYC 72

## RESULT 9

US-08-716-308-2

Sequence 2, Application US/08716308

Patent No. 5885569

GENERAL INFORMATION:

APPLICANT: Windass, John D.

TITLE OF INVENTION: Biological Insect Control Agent

NUMBER OF SEQUENCES: 18

CORRESPONDENCE ADDRESS:

ADDRESSEE: ZENECA Inc.

STREET: 1800 Concord Pike

CITY: Wilmington

STATE: DE

COUNTRY: USA

ZIP: 19850

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/716,308

FILING DATE: 24-SEP-1996

CLASSIFICATION: 424

PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/GB95/00677

FILING DATE: 27-MAR-1995

PRIOR APPLICATION DATA:

APPLICATION NUMBER: GB 9405951.6

FILING DATE: 25-MAR-1994

ATTORNEY/AGENT INFORMATION:

NAME: Hohenschutz, Liza D.

REGISTRATION NUMBER: 33,712

REFERENCE/DOCKET NUMBER: PPD40027X/UST

TELECOMMUNICATION INFORMATION:

TELEPHONE: (302) 886-1699

INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:

LENGTH: 78 amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: peptide

US-08-716-308-2

Query Match 35.8%; Score 135.5; DB 2; Length 78;

Best Local Similarity 40.3%; Pred. No. 5.8e-08;

Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKLTCVIVAVLLTACQLITADDSRG-----TQKRALRSDTKLMSSTR-CKGTGRPC 53

DB 1 MKLTCMIVAVLFLTAMTFATADDPKNGLNFSNAHHEMKNPASKLRKCKSGEWC 60

QY 54 SRIAYNCTGSC 65

DB 61 NILDQNCDDGYC 72

## RESULT 10

US-08-716-308-16

Sequence 16, Application US/08716308

Patent No. 5885569

GENERAL INFORMATION:

APPLICANT: Windass, John D.

TITLE OF INVENTION: Biological Insect Control Agent

NUMBER OF SEQUENCES: 18

CORRESPONDENCE ADDRESS:

ADDRESSEE: ZENECA Inc.

STREET: 1800 Concord Pike

CITY: Wilmington

STATE: DE

COUNTRY: USA

ZIP: 19850

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/716,308

FILING DATE: 24-SEP-1996

CLASSIFICATION: 424

PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/GB95/00677

FILING DATE: 27-MAR-1995

PRIOR APPLICATION DATA:

APPLICATION NUMBER: GB 9405951.6

FILING DATE: 25-MAR-1994

ATTORNEY/AGENT INFORMATION:

NAME: Hohenschutz, Liza D.

REGISTRATION NUMBER: 33,712

REFERENCE/DOCKET NUMBER: PPD40027X/UST

TELECOMMUNICATION INFORMATION:

TELEPHONE: (302) 886-1699

INFORMATION FOR SEQ ID NO: 16:

SEQUENCE CHARACTERISTICS:

LENGTH: 78 amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: peptide

US-08-716-308-16

Query Match 35.8%; Score 135.5; DB 2; Length 78;

Best Local Similarity 40.3%; Pred. No. 5.8e-08;

Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKLTCVIVAVLLTACQLITADDSRG-----TQKRALRSDTKLMSSTR-CKGTGRPC 53

DB 1 MKLTCMIVAVLFLTAMTFATADDPKNGLNFSNAHHEMKNPASKLRKCKSGEWC 60

QY 54 SRIAYNCTGSC 65

DB 61 NILDQNCDDGYC 72

## RESULT 11

PCT-US96-05262-14

Sequence 14, Application PC/TUS9605262

GENERAL INFORMATION:

APPLICANT: Shon, Ki-Joon

APPLICANT: Grilley, Michelle M.

APPLICANT: Oliveira, Baldozero M.

APPLICANT: Yoshikami, Doju

APPLICANT: Marsh, Mairen

APPLICANT: Cruz, Lourdes J.

APPLICANT: Hillyard, David R.

TITLE OF INVENTION: Conotoxin Peptides

NUMBER OF SEQUENCES: 14

CORRESPONDENCE ADDRESS:

ADDRESSEE: Venable, Baetjer, Howard & Civiletti, LLP

STREET: 1201 New York Avenue, N.W., Suite 1000

CITY: Washington

STATE: DC

COUNTRY: U.S.A.

ZIP: 20005

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: PCT/US96/05262

FILING DATE: 17-APR-1996

CLASSIFICATION:

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 08/423,561  
FILING DATE: 17-APR-1995  
ATTORNEY/AGENT INFORMATION:  
NAME: Saxe, Stephen A.  
REGISTRATION NUMBER: 38,609  
REFERENCE/DOCKET NUMBER: 24260-107674  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 202-962-4848  
TELEFAX: 202-962-8300  
INFORMATION FOR SEQ ID NO: 14:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 78 amino acids  
TYPE: amino acid  
STRANDEDNESS: single  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHEICAL: NO  
PCT-US96-05262-14

Query Match 35.8%; Score 135.5; DB 5; Length 78;  
Best Local Similarity 40.3%; Pred. No. 5.8e-08;  
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKITCVIYAVLLITACQLITADDSRG-----TQKRALRSDTKLSMSTR-CKGTGKPC 53  
DB 1 MKITCVIYAVLLITACQLITADDSRG-----TQKRALRSDTKLSMSTR-CKGTGKPC 60  
QY 54 SRIAYNCGTSC 65  
DB 61 MRLDQNCDCYC 72

RESULT 12  
US-08-716-308-17  
Sequence 17, Application US/08716308  
Patent No. 5885569  
GENERAL INFORMATION:  
APPLICANT: Windass, John D.  
TITLE OF INVENTION: Biological Insect Control Agent  
NUMBER OF SEQUENCES: 18  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: ZENECA Inc.  
STREET: 1800 Concord Pike  
CITY: Wilmington  
STATE: DE  
COUNTRY: USA  
ZIP: 19850  
COMPUTER READABLE FORM:  
MEDIUM TYPE: floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/716,308  
FILING DATE: 24-SEP-1996  
CLASSIFICATION: 424  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: PCT/GB95/00677  
FILING DATE: 27-MAR-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: GB 9405951.6  
FILING DATE: 25-MAR-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Hohenschultz, Liza D.  
REGISTRATION NUMBER: 33,712  
REFERENCE/DOCKET NUMBER: PPD40027X/UST  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (302) 886-1699  
INFORMATION FOR SEQ ID NO: 17:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 77 amino acids  
TYPE: amino acid

TOPOLOGY: linear  
MOLECULE TYPE: peptide  
US-08-716-308-17

Query Match 35.7%; Score 135; DB 2; Length 77;  
Best Local Similarity 39.4%; Pred. No. 6.5e-08;  
Matches 28; Conservative 10; Mismatches 27; Indels 6; Gaps 1;

QY 1 MKITCVIYAVLLITACQLITADDSRG-----TQKRALRSDTKLSMSTRCKGTGKPCS 54  
DB 1 MKITCVIYAVLLITACQLITADDSRG-----TQKRALRSDTKLSMSTRCKGTGKPCS 60  
QY 55 SRIAYNCGTSC 65  
DB 61 MRLDQNCDCYC 71

RESULT 13  
US-07-689-693B-7  
Sequence 7, Application US/07689693B  
Patent No. 5231011  
GENERAL INFORMATION:  
APPLICANT: David Hillyard  
APPLICANT: Baldomero M. Olivera  
TITLE OF INVENTION: Segregated Folding Determinants  
NUMBER OF SEQUENCES: 25  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Thorpe, No. 5231011th & Western  
STREET: 9035 South 700 East, Suite 200  
CITY: Sandy  
STATE: Utah  
COUNTRY: USA  
ZIP: 84070  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage  
COMPUTER: Compaq LTE/286  
OPERATING SYSTEM: DOS 4.01  
SOFTWARE: Word Perfect 5.1  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/689,693B  
FILING DATE: 19910418  
CLASSIFICATION: 530  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: none  
FILING DATE: na  
ATTORNEY/AGENT INFORMATION:  
NAME: Western, M. Wayne  
REGISTRATION NUMBER: 22,788  
REFERENCE/DOCKET NUMBER: 9925  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (801) 566-6633  
TELEFAX: (801) 566-0750  
INFORMATION FOR SEQ ID NO: 7:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 77 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: linear  
MOLECULE TYPE: peptide  
FEATURE:  
NAME/KEY: Prepropeptide sequence for four loop  
IDENTIFICATION METHOD: Library was constructed  
IDENTIFICATION METHOD: using polyA selected mRNA transcripts purified  
IDENTIFICATION METHOD: from Conus textile venom duct tissue and cloned  
IDENTIFICATION METHOD: into the Okyama-Berg oligo-dt primed plasmid  
IDENTIFICATION METHOD: pSV7186.  
US-07-689-693B-7

Query Match 35.4%; Score 134; DB 1; Length 77;  
Best Local Similarity 39.4%; Pred. No. 8.4e-08;  
Matches 28; Conservative 10; Mismatches 27; Indels 6; Gaps 1;

Qy 1 MKLTCVIVAVLLTACOLITADDSRG-----TQKRLRSLDRIKLSMSTRCKGTGKPC 54  
Db 1 MKLTCMIVAVLFLTATFPAADDSGNSLSPSKAHHEMNPESKLNKNCIEQDPCE 60  
Qy 55 RIAYNCTGSC 65  
Db 61 MHRHCCGVGC 71

RESULT 14  
US-08-049-794-11  
; Sequence 11, Application US/08049794  
; Patent No. 5587454  
; GENERAL INFORMATION:  
; APPLICANT: JUSTICE, ALAN  
; APPLICANT: SINGH, TEJINDER  
; APPLICANT: GOHIL, KISHOR C  
; APPLICANT: VALENTINO, KAREN L  
; APPLICANT: MILJANICH, GEORGE P  
; TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
; NUMBER OF INVENTION: ENHANCING OPiate ANALGESIA  
; NUMBER OF SEQUENCES: 34  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Law Offices of Peter Dehlinger  
; STREET: 350 Cambridge Avenue, Suite 300  
; CITY: Palo Alto  
; STATE: CA  
; COUNTRY: USA  
; ZIP: 94306  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patent in Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/049,794  
; FILING DATE: 19930415  
; CLASSIFICATION: 514  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US 07/814,759  
; FILING DATE: 30-DEC-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Stratford, Carol A.  
; REGISTRATION NUMBER: 34,444  
; REFERENCE/DOCKET NUMBER: 5865-0009.30  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (415) 324-0880  
; TELEFAX: (415) 324-0960  
; INFORMATION FOR SEQ ID NO: 11:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 26 amino acids  
; TYPE: AMINO ACID  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; HYPOTHEICAL: NO  
; ORIGINAL SOURCE:  
; INDIVIDUAL ISOLATE: SNX-193, FIGURE 2  
US-08-049-794-11  
Query Match 33.9%; Score 128; DB 1; Length 26;  
Best Local Similarity 76.9%; Pred. No. 1.2e-07;  
Matches 20; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

Qy 46 CKGTGKPCSRRIAYNCTGSCRSKCG 71  
Db 1 CKGAGAKCSRLMYDCTGSCRSKCG 26

RESULT 15  
US-08-496-847-11  
; Sequence 11, Application US/08496847  
; Patent No. 5795864  
; GENERAL INFORMATION:

; APPLICANT: Amstutz, Gary A.  
; APPLICANT: Bowersox, Stephen S.  
; APPLICANT: GOHIL, KISHORCHANDRA  
; APPLICANT: ADRIANSEN, PETER I.  
; APPLICANT: KRISHIPATI, RAMASHARMA  
; TITLE OF INVENTION: METHODS AND  
; FORMULATIONS FOR PREVENTING PROGRESSION OF NEUROPATHIC PAIN  
; NUMBER OF SEQUENCES: 36  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Dehlinger & Associates  
; STREET: 350 Cambridge Avenue, Suite 250  
; CITY: Palo Alto  
; STATE: CA  
; COUNTRY: US  
; ZIP: 94306-1546  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Diskette  
; COMPUTER: IBM Compatible  
; OPERATING SYSTEM: DOS  
; SOFTWARE: FASTSEQ for Windows Version 2.0  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/496,847  
; FILING DATE: 27-JUN-1995  
; CLASSIFICATION: 514  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Stratford, Carol A.  
; REGISTRATION NUMBER: 34,444  
; REFERENCE/DOCKET NUMBER: 5865-0009.31  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 650-324-0880  
; TELEFAX: 650-324-0960  
; INFORMATION FOR SEQ ID NO: 11:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 26 amino acids  
; TYPE: amino acid  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; HYPOTHEICAL: NO  
; ORIGINAL SOURCE:  
; INDIVIDUAL ISOLATE: SNX-193, FIGURE 2  
US-08-496-847-11

Query Match 33.9%; Score 128; DB 1; Length 26;  
Best Local Similarity 76.9%; Pred. No. 1.2e-07;  
Matches 20; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

Qy 46 CKGTGKPCSRRIAYNCTGSCRSKCG 71  
Db 1 CKGAGAKCSRLMYDCTGSCRSKCG 26

Search completed: July 1, 2003, 10:53:54  
Job time : 18.75 secs

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GenCore version 5.1.6  
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## OM protein - protein search, using sw model

Run on: July 1, 2003, 10:52:57 ; Search time 25.1458 Seconds

(without alignments)  
309,591 Million cell updates/sec

Title: US-09-910-082A-190

Perfect score: 378  
Sequence: 1 MKLTCVIVAVLLTTCQLL.....PCSRINVCCTGCRSGKCG 71

Scoring table:

BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 424699 seqs, 109646833 residues

Total number of hits satisfying chosen parameters: 424699

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

## Database :

Published\_Applications\_AA:\*

- 1: /cgn2\_6/ptodata/1/pubppa/US08\_NEW\_PUB.pep:\*
- 2: /cgn2\_6/ptodata/1/pubppa/PCF\_NEW\_PUB.pep:\*
- 3: /cgn2\_6/ptodata/1/pubppa/US06\_NEW\_PUB.pep:\*
- 4: /cgn2\_6/ptodata/1/pubppa/US07\_NEW\_PUB.pep:\*
- 5: /cgn2\_6/ptodata/1/pubppa/US07\_PUBCOMB.pep:\*
- 6: /cgn2\_6/ptodata/1/pubppa/US07\_PUBCOMB.pep:\*
- 7: /cgn2\_6/ptodata/1/pubppa/PCFUS\_PUBCOMB.pep:\*
- 8: /cgn2\_6/ptodata/1/pubppa/US08\_PUBCOMB.pep:\*
- 9: /cgn2\_6/ptodata/1/pubppa/US09\_NEW\_PUB.pep:\*
- 10: /cgn2\_6/ptodata/1/pubppa/US09\_PUBCOMB.pep:\*
- 11: /cgn2\_6/ptodata/1/pubppa/US10\_NEW\_PUB.pep:\*
- 12: /cgn2\_6/ptodata/1/pubppa/US10\_PUBCOMB.pep:\*
- 13: /cgn2\_6/ptodata/1/pubppa/US60\_NEW\_PUB.pep:\*
- 14: /cgn2\_6/ptodata/1/pubppa/US60\_PUBCOMB.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	211.5	56.0	77	9	US-09-749-637A-408
2	200	52.9	74	9	US-10-072-602B-29
3	171	45.2	81	9	US-10-072-602B-168
4	168.5	44.6	76	9	US-10-072-602B-153
5	162	42.9	75	9	US-10-072-602B-113
6	152.5	40.3	76	9	US-09-749-637A-207
7	151.5	40.1	80	9	US-10-072-602B-65
8	150.5	39.8	88	9	US-10-072-602B-147
9	149.5	39.6	88	9	US-10-072-602B-150
10	147	38.9	77	9	US-09-749-637A-48
11	143	37.8	77	9	US-09-749-637A-294
12	143	37.8	77	9	US-09-749-637A-330
13	142	37.6	79	9	US-09-749-637A-42
14	142	37.6	79	9	US-10-072-602B-255
15	141	37.3	77	9	US-10-072-602B-137
16	139	36.8	77	9	US-09-749-637A-39
17	139	36.8	80	9	US-09-749-637A-86
18	138.5	36.6	78	9	US-09-749-637A-26
19	138.5	36.6	78	9	US-09-749-637A-33

20	136	36.0	80	9	US-09-749-637A-65	Sequence 65, Appl
21	135.5	35.8	75	9	US-10-072-602B-264	Sequence 264, Appl
22	135.5	35.8	78	9	US-09-749-637A-22	Sequence 22, Appl
23	135.5	35.8	78	9	US-09-749-637A-30	Sequence 30, Appl
24	134.5	35.6	78	9	US-10-072-602B-222	Sequence 222, Appl
25	134	35.4	76	9	US-09-749-637A-321	Sequence 321, Appl
26	134	35.4	80	9	US-09-749-637A-83	Sequence 83, Appl
27	131	34.7	76	9	US-09-749-637A-80	Sequence 80, Appl
28	131	34.7	77	9	US-09-749-637A-116	Sequence 116, Appl
29	130	34.4	95	9	US-09-749-637A-264	Sequence 264, Appl
30	129.5	34.3	76	9	US-09-749-637A-62	Sequence 62, Appl
31	129	34.1	77	9	US-09-749-637A-71	Sequence 71, Appl
32	128	33.9	77	9	US-09-749-637A-110	Sequence 110, Appl
33	127.5	33.7	82	9	US-09-749-637A-267	Sequence 267, Appl
34	126.5	33.5	78	9	US-10-072-602B-267	Sequence 267, Appl
35	126	33.3	78	9	US-09-749-637A-13	Sequence 13, Appl
36	126	33.3	81	9	US-09-749-637A-152	Sequence 152, Appl
37	125	33.1	76	9	US-09-749-637A-306	Sequence 306, Appl
38	125	33.1	78	9	US-09-749-637A-122	Sequence 122, Appl
39	124	32.8	76	9	US-09-749-637A-339	Sequence 339, Appl
40	124	32.8	80	9	US-09-749-637A-56	Sequence 56, Appl
41	123.5	32.7	82	9	US-10-072-602B-140	Sequence 140, Appl
42	123	32.5	77	9	US-09-749-637A-113	Sequence 113, Appl
43	121	32.0	75	9	US-09-749-637A-36	Sequence 36, Appl
44	121	32.0	77	9	US-09-749-637A-2	Sequence 2, Appl
45	121	32.0	77	9	US-09-749-637A-77	Sequence 77, Appl

## ALIGNMENTS

RESULT 1  
US-09-749-637A-408  
; Sequence 408, Application US/09749637A  
; Patent NO. US20020173449A1  
; GENERAL INFORMATION:  
; APPLICANT: University of Utah Research Foundation  
; APPLICANT: Cognetix, Inc.  
; APPLICANT: Oliviera, Baldomero M.  
; APPLICANT: Cartier, G. Edward  
; APPLICANT: Watkins, Maren  
; APPLICANT: Hilliard, David R.  
; APPLICANT: McIntosh, J. Michael  
; APPLICANT: Layer, Richard T.  
; APPLICANT: Jones, Robert M.  
; TITLE OR INVENTION: O-Superfamily Conotoxin Peptides  
; FILE REFERENCE: 2314-227  
; CURRENT APPLICATION NUMBER: US/09/749,637A  
; PRIOR FILING DATE: 2000-12-28  
; PRIOR FILING DATE: 2000-10-27  
; PRIOR FILING DATE: 2000-07-20  
; PRIOR APPLICATION NUMBER: US60/219,440  
; PRIOR FILING DATE: 2000-06-26  
; PRIOR FILING DATE: 2000-06-26  
; PRIOR APPLICATION NUMBER: US 60/173,754  
; PRIOR FILING DATE: 1999-12-30  
; NUMBER OF SEQ ID NOS: 409  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 408  
; LENGTH: 77  
; TYPE: PRT  
; ORGANISM: Conus striolatus  
US-09-749-637A-408

Query Match 56.0%; Score 211.5; DB 9; Length 77;  
Best Local Similarity 67.7%; Pred. No. 1.6e-14;  
Matches 44; Conservative 3; Mismatches 17; Indels 1; Gaps 1;

OY 1 MKLTCVIVAVLLTTCQLLTDSDSGTKHRAIRSDTKSMSTRCKGTGCPSCRINVC 60  
Db 1 MKLTCVIVAVLLTTCQLLTDSDSGTKHRAIRSDTKSMSTRCKGTGCPSCRINVC 60

OY 61 CTGSC 65  
DB 61 C-GYC 64

## RESULT 2

US-10-072-602B-29  
Sequence 29, Application US/10072602B  
Publication No. US20030109670A1  
GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: McIntosh, J, Michael  
APPLICANT: Watkins, Maren  
APPLICANT: Garrett, James E.  
APPLICANT: Cruz, Lourdes J.  
APPLICANT: Grilley, Michelle  
APPLICANT: Schoenfeld, Robert M.  
APPLICANT: Walker, Craig  
APPLICANT: Shetty, Reshma  
APPLICANT: Jones, Robert M.  
TITLE OF INVENTION: Cone Snail Peptides  
FILE REFERENCE: 2314-249  
CURRENT APPLICATION NUMBER: US/10/072,602B  
CURRENT FILING DATE: 2002-02-11  
PRIOR APPLICATION NUMBER: US 60/267,408  
PRIOR FILING DATE: 2001-02-09  
NUMBER OF SEQ ID NOS: 638  
SOFTWARE: PatentIn version 3.0  
SEQ ID NO 29  
LENGTH: 74  
TYPE: PRT  
ORGANISM: Conus arenatus  
US-10-072-602B-29

Query Match 52.9%; Score 200; DB 9; Length 74;  
Best Local Similarity 72.6%; Pred. No. 2,3e-13;  
Matches 45; Conservative 1; Mismatches 14; Indels 2; Gaps 2;  
OY 1 MKLTCVIVAVLLITACQLITADDSRGTOKHRLRSTKLSMSTR-CKGTGKCSRIAYN 59  
DB 1 MKLTCVIVAVLLITACQLITADDSRGTOKHRLRSTKLSMSTR-CKGTGKCSRIAYN 59  
OY 60 CC 61  
DB 60 CC 61

## RESULT 3

US-10-072-602B-168  
Sequence 168, Application US/10072602B  
Publication No. US20030109670A1  
GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: McIntosh, J, Michael  
APPLICANT: Watkins, Maren  
APPLICANT: Garrett, James E.  
APPLICANT: Cruz, Lourdes J.  
APPLICANT: Grilley, Michelle  
APPLICANT: Schoenfeld, Robert M.  
APPLICANT: Walker, Craig  
APPLICANT: Shetty, Reshma  
APPLICANT: Jones, Robert M.  
TITLE OF INVENTION: Cone Snail Peptides  
FILE REFERENCE: 2314-249  
CURRENT APPLICATION NUMBER: US/10/072,602B  
CURRENT FILING DATE: 2002-02-11  
PRIOR APPLICATION NUMBER: US 60/267,408  
PRIOR FILING DATE: 2001-02-09  
NUMBER OF SEQ ID NOS: 638

SOFTWARE: PatentIn version 3.0  
SEQ ID NO 168  
LENGTH: 81  
TYPE: PRT  
ORGANISM: Conus pulicarius  
US-10-072-602B-168

Query Match 45.2%; Score 171; DB 9; Length 81;  
Best Local Similarity 52.1%; Pred. No. 2,1e-10;  
Matches 38; Conservative 5; Mismatches 20; Indels 10; Gaps 2;

OY 1 MKLTCVIVAVLLITACQLITADDSRGTOKHRLRSTKLSMSTR-CKGTGKCSRIAYN 52  
DB 1 MKLTCVIVAVLLITACQLITADDSRGTOKHRLRSTKLSMSTR-CKGTGKCSRIAYN 52  
OY 53 CSRIAYNCTGSC 65  
DB 59 CVPATHNCCSGEC 71

## RESULT 4

US-10-072-602B-153  
Sequence 153, Application US/10072602B  
Publication No. US20030109670A1  
GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: McIntosh, J, Michael  
APPLICANT: Watkins, Maren  
APPLICANT: Garrett, James E.  
APPLICANT: Cruz, Lourdes J.  
APPLICANT: Grilley, Michelle  
APPLICANT: Schoenfeld, Robert M.  
APPLICANT: Walker, Craig  
APPLICANT: Shetty, Reshma  
APPLICANT: Jones, Robert M.  
TITLE OF INVENTION: Cone Snail Peptides  
FILE REFERENCE: 2314-249  
CURRENT APPLICATION NUMBER: US/10/072,602B  
CURRENT FILING DATE: 2002-02-11  
PRIOR APPLICATION NUMBER: US 60/267,408  
PRIOR FILING DATE: 2001-02-09  
NUMBER OF SEQ ID NOS: 638  
SOFTWARE: PatentIn version 3.0  
SEQ ID NO 153  
LENGTH: 76  
TYPE: PRT  
ORGANISM: Conus millaris  
US-10-072-602B-153

Query Match 44.6%; Score 168.5; DB 9; Length 76;  
Best Local Similarity 61.5%; Pred. No. 3,5e-10;  
Matches 40; Conservative 4; Mismatches 18; Indels 3; Gaps 3;

OY 3 LTCVIVAVLLITACQLITADDSRGTOKHRLRSTKLSMSTR-CKGTGKCSRIAYN 60  
DB 1 LTCVIVAVLLITACQLITADDSRGTOKHRLRSTKLSMSTR-CKGTGKCSRIAYN 59  
OY 61 CTGSC 65  
DB 60 CSKTC 64

## RESULT 5

US-10-072-602B-113  
Sequence 113, Application US/10072602B  
Publication No. US20030109670A1  
GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: McIntosh, J, Michael

APPLICANT: Watkins, Maren  
APPLICANT: Garrett, James E.  
APPLICANT: Cruz, Lourdes J.  
APPLICANT: Grilley, Michelle  
APPLICANT: Schoenfeld, Robert M.  
APPLICANT: Walker, Craig  
APPLICANT: Shetty, Reshma  
APPLICANT: Jones, Robert M.  
TITLE OF INVENTION: Cone Snail Peptides  
FILE REFERENCE: 2314-249  
CURRENT APPLICATION NUMBER: US/10/072,602B  
CURRENT FILING DATE: 2002-02-11  
PRIOR APPLICATION NUMBER: US 60/267,408  
PRIOR FILING DATE: 2001-02-09  
NUMBER OF SEQ ID NOS: 638  
SOFTWARE: PatentIn version 3.0  
SEQ ID NO 113  
LENGTH: 75  
TYPE: PRT  
ORGANISM: Conus geographus  
US-10-072-602B-113

Query Match 42.9%; Score 162; DB 9; Length 75;  
Best Local Similarity 56.1%; Pred. No. 1.5e-09;  
Matches 37; Conservative 3; Mismatches 20; Indels 6; Gaps 2;

QY 1 MKLTCVIVAVLLTACQLITADDSRGTKHRLRSDTKLSM---STCKGTGKPCSR1A 57  
DB 1 MNLTCVLIIVLFTACQLITADDSRGTKHRLRSDTKLSM---STCKGTGKPCSR1A 57  
QY 58 YNCCTG 63  
DB 58 PQCCMG 63

RESULT 6  
US-09-749-637A-207  
Sequence 207, Application US/09749637A  
Patent No. US20020173449A1  
GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: Cartier, G. Edward  
APPLICANT: Watkins, Maren  
APPLICANT: Hillyard, David R.  
APPLICANT: McIntosh, J. Michael  
APPLICANT: Layer, Richard T.  
APPLICANT: Jones, Robert M.  
TITLE OF INVENTION: O-Superfamily Conotoxin Peptides  
FILE REFERENCE: 2314-227  
CURRENT APPLICATION NUMBER: US/09/749,637A  
CURRENT FILING DATE: 2000-12-28  
PRIOR APPLICATION NUMBER: US 60/243,412  
PRIOR FILING DATE: 2000-10-27  
PRIOR APPLICATION NUMBER: US60/219,440  
PRIOR FILING DATE: 2000-07-20  
PRIOR APPLICATION NUMBER: US 60/214,263  
PRIOR FILING DATE: 2000-06-26  
PRIOR APPLICATION NUMBER: US 60/173,754  
PRIOR FILING DATE: 1999-12-30  
NUMBER OF SEQ ID NOS: 409  
SOFTWARE: PatentIn version 3.0  
SEQ ID NO 207  
LENGTH: 76  
TYPE: PRT  
ORGANISM: Conus distans  
US-09-749-637A-207

Query Match 40.3%; Score 152.5; DB 9; Length 76;  
Best Local Similarity 48.6%; Pred. No. 1.4e-08;  
Matches 36; Conservative 12; Mismatches 21; Indels 5; Gaps 4;

QY 1 MKLTCVIVAVLLTACQLIT-ADDSRGTKHRLRSDTKLS-MSTRCKGTGKPCSR1AY 58  
DB 1 MNLTCVLIIVLFTACQLITADDSRGTKHRLRSDTKLSM---STCKGTGKPCSR1A 57  
QY 59 NCTGSCRS--GKC 70  
DB 60 DCCSESCNKFVGRG 73

RESULT 7  
US-10-072-602B-65  
Sequence 65, Application US/10072602B  
Publication No. US20030109670A1  
GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: McIntosh, J. Michael  
APPLICANT: Watkins, Maren  
APPLICANT: Garrett, James E.  
APPLICANT: Cruz, Lourdes J.  
APPLICANT: Grilley, Michelle  
APPLICANT: Schoenfeld, Robert M.  
APPLICANT: Walker, Craig  
APPLICANT: Shetty, Reshma  
APPLICANT: Jones, Robert M.  
TITLE OF INVENTION: Cone Snail Peptides  
FILE REFERENCE: 2314-249  
CURRENT APPLICATION NUMBER: US/10/072,602B  
CURRENT FILING DATE: 2002-02-11  
PRIOR APPLICATION NUMBER: US 60/267,408  
PRIOR FILING DATE: 2001-02-09  
NUMBER OF SEQ ID NOS: 638  
SOFTWARE: PatentIn version 3.0  
SEQ ID NO 65  
LENGTH: 80  
TYPE: PRT  
ORGANISM: Conus caracteristicus  
US-10-072-602B-65

Query Match 40.1%; Score 151.5; DB 9; Length 80;  
Best Local Similarity 50.0%; Pred. No. 1.9e-08;  
Matches 34; Conservative 7; Mismatches 24; Indels 3; Gaps 1;

QY 1 MKLTCVIVAVLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR1AY 60  
DB 1 MNLTCVLIIVLFTACQLITADDSRGTKHRLRSDTKLSM---STCKGTGKPCSR1A 57  
QY 61 CTGSCRS 68  
DB 58 ATRPCSG 65

RESULT 8  
US-10-072-602B-147  
Sequence 147, Application US/10072602B  
Publication No. US20030109670A1  
GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: McIntosh, J. Michael  
APPLICANT: Watkins, Maren  
APPLICANT: Garrett, James E.  
APPLICANT: Cruz, Lourdes J.  
APPLICANT: Grilley, Michelle  
APPLICANT: Schoenfeld, Robert M.  
APPLICANT: Walker, Craig  
APPLICANT: Shetty, Reshma  
APPLICANT: Jones, Robert M.  
TITLE OF INVENTION: Cone Snail Peptides  
FILE REFERENCE: 2314-249  
CURRENT APPLICATION NUMBER: US/10/072,602B



ORGANISM: Conus marmoreus  
US-09-749-637A-294

Query Match 37.8%: Score 143; DB 9; Length 77;  
Best Local Similarity 42.3%: Pred. No. 1.3e-07;  
Matches 30; Conservative 9; Mismatches 26; Indels 6; Gaps 1;

QY 1 MKLTCVIVAVLLTACQLITADDSRG-----TQKRALRSDTKLSMSTRCKGTGRPCS 54  
|||||  
DB 1 MKLTCVIVAVLLTAMFTATADDPKRLGLENLFSKAHHEKNPESAKLNKRCPTGELCD 60  
|||||

QY 55 RIAYNCTGSC 65  
: |||||  
DB 61 VVEONCCCTYTC 71

RESULT 12  
US-09-749-637A-330  
Sequence 330, Application US/09749637A  
Patent No. US20020173449A1

GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.

APPLICANT: Olivera, Baldomero M.  
APPLICANT: Cartier, G. Edward  
APPLICANT: Watkins, Maren  
APPLICANT: Hilliard, David R.  
APPLICANT: McIntosh, J. Michael  
APPLICANT: Layer, Richard T.  
APPLICANT: Jones, Robert M.  
FILE OF INVENTION: O-Superfamily Conotoxin Peptides  
TITLE REFERENCE: 2314-227

CURRENT APPLICATION NUMBER: US/09/749,637A  
CURRENT FILING DATE: 2000-12-28  
PRIOR APPLICATION NUMBER: US 60/243,412  
PRIOR FILING DATE: 2000-10-27  
PRIOR APPLICATION NUMBER: US60/219,440  
PRIOR FILING DATE: 2000-07-20  
PRIOR APPLICATION NUMBER: US 60/214,263  
PRIOR FILING DATE: 2000-06-26  
PRIOR APPLICATION NUMBER: US 60/173,754  
PRIOR FILING DATE: 1999-12-30

NUMBER OF SEQ ID NOS: 409  
SOFTWARE: PatentIn version 3.0  
SEQ ID NO 330  
LENGTH: 77  
TYPE: PRT  
ORGANISM: Conus lividus  
US-09-749-637A-330

Query Match 37.8%: Score 143; DB 9; Length 77;  
Best Local Similarity 42.3%: Pred. No. 1.3e-07;  
Matches 30; Conservative 9; Mismatches 26; Indels 6; Gaps 1;

QY 1 MKLTCVIVAVLLTACQLITADDSRG-----TQKRALRSDTKLSMSTRCKGTGRPCS 54  
|||||  
DB 1 MKLTCVIVAVLLTAMFTATADDPKRLGLENLFSKAHHEKNPESAKLNKRCPTGELCD 60  
|||||

QY 55 RIAYNCTGSC 65  
: |||||  
DB 61 VVEONCCCTYTC 71

RESULT 13  
US-09-749-637A-42  
Sequence 42, Application US/09749637A  
Patent No. US20020173449A1

GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: Cartier, G. Edward  
APPLICANT: Watkins, Maren

APPLICANT: Hilliard, David R.  
APPLICANT: McIntosh, J. Michael  
APPLICANT: Layer, Richard T.  
APPLICANT: Jones, Robert M.  
FILE OF INVENTION: O-Superfamily Conotoxin Peptides  
TITLE REFERENCE: 2314-227

CURRENT APPLICATION NUMBER: US/09/749,637A  
CURRENT FILING DATE: 2000-12-28  
PRIOR APPLICATION NUMBER: US 60/243,412  
PRIOR FILING DATE: 2000-10-27  
PRIOR APPLICATION NUMBER: US60/219,440  
PRIOR FILING DATE: 2000-07-20  
PRIOR APPLICATION NUMBER: US 60/214,263  
PRIOR FILING DATE: 2000-06-26  
PRIOR APPLICATION NUMBER: US 60/173,754  
PRIOR FILING DATE: 1999-12-30

NUMBER OF SEQ ID NOS: 409  
SOFTWARE: PatentIn version 3.0  
SEQ ID NO 42  
LENGTH: 77  
TYPE: PRT  
ORGANISM: Conus gloriamaris  
US-09-749-637A-42

Query Match 37.6%: Score 142; DB 9; Length 77;  
Best Local Similarity 42.3%: Pred. No. 1.6e-07;  
Matches 30; Conservative 12; Mismatches 23; Indels 6; Gaps 2;

QY 1 MKLTCVIVAVLLTACQLITADDSR-GTQK-----HRAISRDTKLSMSTRCKGTGRPCS 54  
|||||  
DB 1 MKLTCMIVAVLLTAMFTATADDPKRLGLENLFSNTHHEKNPESAKLNKRCQADESCN 60  
|||||

QY 55 RIAYNCTGSC 65  
: |||||  
DB 61 VFSIDCCTGIC 71

RESULT 14  
US-10-072-602B-255

Sequence 255, Application US/10072602B  
Publication No. US20030109670A1

GENERAL INFORMATION:  
APPLICANT: University of Utah Research Foundation  
APPLICANT: Cognetix, Inc.

APPLICANT: Olivera, Baldomero M.  
APPLICANT: McIntosh, J. Michael  
APPLICANT: Watkins, Maren  
APPLICANT: Garrett, James E.  
APPLICANT: Cruz, Lourdes J.  
APPLICANT: Grilley, Michelle  
APPLICANT: Schoenfeld, Robert M.  
APPLICANT: Walker, Craig  
APPLICANT: Shetty, Reshma

FILE OF INVENTION: Cone snail Peptides  
TITLE REFERENCE: 2314-249  
CURRENT APPLICATION NUMBER: US/10/072,602B  
CURRENT FILING DATE: 2002-02-11  
PRIOR APPLICATION NUMBER: US 60/267,408  
PRIOR FILING DATE: 2001-02-09  
NUMBER OF SEQ ID NOS: 638  
SOFTWARE: PatentIn version 3.0  
SEQ ID NO 255

LENGTH: 79  
TYPE: PRT  
ORGANISM: Conus litgo  
US-10-072-602B-255

Query Match 37.6%: Score 142; DB 9; Length 79;  
Best Local Similarity 46.7%: Pred. No. 1.7e-07;  
Matches 35; Conservative 9; Mismatches 25; Indels 6; Gaps 3;

QY 1 MKLTCVIVAVLLTACQLITADDSRGTOKRALRSDTKLSMSTRCKGTGRPCSR1A 57  
|||||

Tue Jul 1 11:02:01 2003

us-09-910-082a-190.rapb

Db 1 MKLTCVITITVLEFLFASOLITADYSRDKQRYRAVLGDEMNFKGARDGSGGSGC--YT 58  
QY 58 YNCCTG-SCRSKCG 71  
Db 59 QPCCPGLRCRGGGTG 73

RESULT 15  
US-10-072-602B-137  
; Sequence 137, Application US/10072602B  
; Publication No. US20030109670A1  
; GENERAL INFORMATION:  
; APPLICANT: University of Utah Research Foundation  
; APPLICANT: Cognetix, Inc.  
; APPLICANT: Olivera, Baldomero M.  
; APPLICANT: McIntosh, J, Michael  
; APPLICANT: Watkins, Maren  
; APPLICANT: Garrett, James E.  
; APPLICANT: Cruz, Lourdes J.  
; APPLICANT: Grilley, Michelle  
; APPLICANT: Schoenfeld, Robert M.  
; APPLICANT: Walker, Craig  
; APPLICANT: Shetty, Reshma  
; APPLICANT: Jones, Robert M.  
; TITLE OF INVENTION: Cone Snail Peptides  
; FILE REFERENCE: 2314-249  
; CURRENT APPLICATION NUMBER: US/10/072,602B  
; CURRENT FILING DATE: 2002-02-11  
; PRIOR APPLICATION NUMBER: US 60/267,408  
; PRIOR FILING DATE: 2001-02-09  
; NUMBER OF SEQ ID NOS: 638  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 137  
; LENGTH: 77  
; TYPE: PRT  
; ORGANISM: Connus lividus  
US-10-072-602B-137

Query Match 37.3%; Score 141; DB 9; Length 77;  
Best Local Similarity 49.3%; Pred. No. 2.1e-07;  
Matches 37; Conservative 6; Mismatches 26; Indels 6; Gaps 3;  
QY 1 MKLTCVITVAVLITACOLITADDSRGTOKHRAIR--SDTKLSMSTRCKGTGKPCSRIA 57  
Db 1 MKLTCVITVITAVLITFASOLITADYSRDKQRYRAVLGDEMNFKGARDGSGGSGC--YT 58  
QY 58 YNCCTG-SCRSKCG 71  
Db 59 RPPCPGLRCRGGGTG 73

Search completed: July 1, 2003, 11:01:51  
Job time : 25.1458 secs

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 1, 2003, 10:48:47 ; Search time 7.03125 Seconds

(without alignments)  
341.811 Million cell updates/sec

Title: US-09-910-082a-375

Perfect score: 153  
Sequence: 1 CKGTGKPCSRIRAYNCTGSCRSRGKC 25

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Listing first 45 summaries

Database :

1: PIR\_73:\*  
2: PIR1:\*  
3: PIR3:\*  
4: PIR4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	121	79.1	25	2 JH0700	omega-conotoxin MV
2	105	68.6	25	2 JH0701	omega-conotoxin MV
3	98.5	64.4	29	2 JH0699	omega-conotoxin MV
4	94	61.4	29	2 A58537	omega-conotoxin MV
5	89.5	58.5	26	2 C44379	omega-conotoxin SV
6	67.5	44.1	29	2 A43620	omega-conotoxin GV
7	67.5	44.1	29	2 B43620	omega-conotoxin GV
8	66	43.1	26	2 T28626	variant-specific s
9	61.5	40.2	73	1 NTRN66	omega-conotoxin GV
10	61.5	40.2	909	1 ORXLL1	LDL receptor 1 pre
11	61	39.9	78	2 SI2513	delta-conotoxin Tx
12	60.5	39.5	139	2 S54085	probable membrane
13	60	39.2	24	2 B44379	omega-conotoxin SV
14	60	39.2	27	2 S19619	delta-conotoxin Tx
15	60	39.2	4753	1 A47437	LDL-receptor-relat
16	59.5	38.9	52	2 T10299	conotoxin-like pro
17	59	38.6	2150	2 T32497	hypothetical prote
18	58.5	38.2	909	1 ORXLL2	LDL receptor 2 pre
19	58	37.9	816	2 C69493	hypothetical prote
20	57.5	37.6	1291	2 T21694	glycoprotein GP330
21	56	36.6	1408	2 A30363	gene serrate prote
22	56	36.6	1550	2 S53457	dominant autonag
23	56	36.6	1550	2 S53457	alpha-2-macroglobu
24	56	36.6	1550	2 S53457	alpha-2-macroglobu
25	56	36.6	1550	2 S53457	alpha-2-macroglobu
26	56	36.6	1550	2 S53457	alpha-2-macroglobu
27	55	35.9	385	2 A54785	predipocyte facto
28	55	35.9	385	2 S53718	homocytic protein d
29	54.5	35.6	176	2 T17935	hypothetical prote

30	54	35.3	862	1 ORMSLD	LDL receptor precu
31	54	35.3	1369	2 S70713	protein-tyrosine k
32	53.5	35.0	491	2 S05408	keratin, type II,
33	53	34.6	64	2 A25775	metallochionein A
34	53	34.6	64	2 A33825	metallochionein A
35	53	34.6	621	2 I38467	low density lipopr
36	53	34.6	860	1 ORH917	LDL receptor precu
37	52.5	34.3	72	2 S39417	metallochionein 10
38	52	34.0	4545	1 S25111	alpha-2-macroglobu
39	51.5	33.7	37	2 E44007	apotoxin III - tr
40	51.5	33.7	65	2 A38739	metallochionein -
41	51.5	33.7	491	2 S52920	disintegrin (EC 3.
42	51.5	33.7	544	2 S52477	disintegrin (EC 3.
43	51.5	33.7	1172	2 A42587	thrombospondin 2 p
44	51.5	33.7	2706	2 T28155	variant-specific s
45	51	33.3	71	2 AC3461	non-essential p11u

#### ALIGNMENTS

RESULT 1  
JH0700  
omega-conotoxin MV1A [validated] - cone shell (Conus magus)  
C:Species: Conus magus (magus cone)  
C:Date: 17-Apr-1993 #sequence, revision 17-Apr-1993 #ext\_change 15-Sep-2000  
C:Accession: JH0700; C60133; A34115  
R:Hillyard, D.R.; Monje, V.D.; Mintz, I.M.; Bean, B.P.; Nadasdi, L.; Ramchandran, J.  
Neuron 9, 69-77, 1992  
A:Title: A new conus peptide ligand for mammalian presynaptic Ca2+ channels.  
A:Reference number: JH0699; PMID:92337922; PMID:1352886  
A:Accession: JH0700  
A>Status: nucleic acid sequence not shown  
A:Molecule type: mRNA  
A:Residues: 1-25 <HIL>  
R:Olivera, B.M.; Gray, W.R.; Zeikus, R.; McIntosh, J.M.; Varga, J.; Rivier, J.; de Sa  
Science 230, 1338-1343, 1985  
A:Title: Peptide neurotoxins from fish-hunting cone snails.  
A:Reference number: A43620; PMID:86070213; PMID:4071055  
A:Accession: C60133  
A:Molecule type: protein  
A:Residues: 1-25 <OLI>  
R:Olivera, B.M.; Cruz, L.J.; de Santos, V.; Lechmanant, G.W.; Griffin, D.; Zeikus, R.  
Biochemistry 26, 2086-2090, 1987  
A:Title: Neuronal calcium channel antagonists. Discrimination between calcium channel  
A:Reference number: A34115; PMID:87299637; PMID:2441741  
A:Contents: annotation  
R:Meisen, K.J.; Thomas, L.; Lewis, R.J.; Alewood, P.F.; Craik, D.J.  
submitted to the Brookhaven Protein Data Bank, August 1996  
A:Reference number: A67648; PDB:1MVT  
A:Contents: annotation; conformation by (1)H-NMR, residues 1-25  
R:Meisen, K.J.; Thomas, L.; Lewis, R.J.; Alewood, P.F.; Craik, D.J.  
J. Mol. Biol. 263, 297-310, 1996  
A:Title: A consensus structure for omega-conotoxins with different selectivities for  
A:Reference number: A58619; PMID:97070382; PMID:8913308  
A:Contents: annotation; conformation by (1)H-NMR  
R:Kono, T.; Kim, J.I.; Kobayashi, K.; Kodera, Y.; Maeda, T.; Sato, K.  
submitted to the Brookhaven Protein Data Bank, April 1995  
A:Reference number: A66296; PDB:1OMG  
A:Contents: annotation; conformation by (1)H-NMR, residues 1-25  
R:Kono, T.; Kim, J.I.; Kobayashi, K.; Kodera, Y.; Maeda, T.; Sato, K.  
Biochemistry 34, 10256-10265, 1995  
A:Title: Three-dimensional structure in solution of the calcium channel blocker omega  
A:Reference number: A58627; PMID:95367555; PMID:7640281  
A:Contents: annotation; conformation by (1)H-NMR  
C:Superfamily: omega-conotoxin  
C:Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel  
F;1-16,8-20,15-25/Disulfide bonds: #status predicted  
F;35/Modified site: amidated carboxyl end (Cys) #status experimental

Query Match 79.1%; Score 121; DB 2; Length 25;  
Best local Similarity 76.0%; Pred. No. 2,6e-07;  
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIVANCCTGSCRSRGC 25  
||| | ||| : ||| ||| ||| |||  
Db 1 CKGKGAKCSRLMTDCTGSCRSRGC 25

## RESULT 2

omega-conotoxin MVITB - cone shell (Conus magus)  
C:Species: Conus magus (magus cone)  
C:Date: 17-Apr-1993 #sequence\_revision 17-Apr-1993 #text\_change 23-May-1997  
C:Accession: JH0701; B34115  
R:Hillary, D.R.; Monje, V.D.; Mintz, I.M.; Bean, B.P.; Nadasdi, L.; Ramachandran, J.; N  
Neuron 9, 69-77, 1992  
A:Title: A new conus peptide ligand for mammalian presynaptic Ca2+ channels.  
A:Reference number: JH0699; MUID:92337922; PMID:1352986  
A:Accession: JH0701  
A:Status: nucleic acid sequence not shown  
A:Molecule type: mRNA  
A:Residues: 1-25 <HIL>  
R:Olivera, B.M.; Cruz, L.J.; de Santos, V.; LeCheminant, G.W.; Griffin, D.; Zekus, R.;  
Biochemistry 26, 2086-2090, 1987  
A:Title: Neuronal calcium channel antagonists. Discrimination between calcium channel su  
A:Accession: B34115; MUID:87299637; PMID:2441741  
A:Molecule type: protein  
A:Residues: 1-25 <OL>  
C:Superfamily: omega-conotoxin  
C:Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel inh  
F:1-16,8-20,15-25/Disulfide bonds: #status predicted  
F:25/Modified site: amidated carboxyl end (Cys) #status predicted

Query Match 68.6%; Score 105; DB 2; Length 25;  
Best Local Similarity 64.0%; Pred. No. 1.6e-05;  
Matches 16; Conservative 2; Mismatches 7; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIVANCCTGSCRSRGC 25  
||| | ||| : ||| ||| ||| |||  
Db 1 CKGKGAKCSRLMTDCTGSCRSRGC 25

## RESULT 3

omega-conotoxin MVITC precursor [validated] - cone shell (Conus magus) (fragment)  
JH0699  
C:Species: Conus magus (magus cone)  
C:Date: 17-Apr-1993 #sequence\_revision 11-Apr-1997 #text\_change 15-Sep-2000  
C:Accession: JH0699; PC2380  
R:Hillary, D.R.; Monje, V.D.; Mintz, I.M.; Bean, B.P.; Nadasdi, L.; Ramachandran, J.; M  
Neuron 9, 69-77, 1992  
A:Title: A new conus peptide ligand for mammalian presynaptic Ca2+ channels.  
A:Reference number: JH0699; MUID:92337922; PMID:1352986  
A:Accession: JH0699  
A:Molecule type: mRNA  
A:Residues: 1-29 <HIL>  
A:Cross-references: GB:S40826; NID:9252126; PIDN:AB22674.1; PID:9252127  
R:Nemoto, N.; Kubo, S.; Yoshida, T.; Chino, N.; Kimura, T.; Sakakibara, S.; Kyogoku, Y.;  
Biochem. Biophys. Res. Commun. 207, 695-700, 1995  
A:Title: Solution structure of omega-conotoxin MVITC determined by NMR.  
A:Reference number: PC2380; MUID:95169113; PMID:7864862  
A:Accession: PC2380  
A:Molecule type: protein  
A:Residues: 3-28 <NEW>  
R:Fair-Jones, S.; Basus, V.J.  
submitted to the Brookhaven Protein Data Bank, December 1994  
A:Reference number: A66297; PDB:1OMN  
A:Contents: annotation; conformation by (1)H-NMR, residues 3-28  
R:Fair-Jones, S.; Miljanich, G.P.; Nadasdi, L.; Ramachandran, J.; Basus, V.J.  
J. Mol. Biol. 240, 106-124, 1995  
A:Title: Solution structure of omega-conotoxin MVITC, a high affinity of P-type calcium  
A:Reference number: A58582; MUID:95248539; PMID:7731037  
A:Contents: annotation; conformation by (1)H-NMR  
C:Superfamily: omega-conotoxin  
C:Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel inh

F:3-28/Product: omega-conotoxin MVITC #status experimental <MAT>  
F:3-18,10-22,17-28/Disulfide bonds: #status experimental  
F:28/Modified site: amidated carboxyl end (Cys) (amide in mature form from following  
Query Match 64.4%; Score 98.5; DB 2; Length 29;  
Best Local Similarity 61.5%; Pred. No. 9.3e-05;  
Matches 16; Conservative 3; Mismatches 6; Indels 1; Gaps 1;

OY 1 CKGTGKPCSRIVANCCTGSCRSRGC 25  
||| | ||| : ||| ||| ||| |||  
Db 3 CKGKAPCRKMTYDCSGSCGRRC 28

## RESULT 4

omega-conotoxin MVITD precursor - cone shell (Conus magus) (fragment)  
A58537  
C:Species: Conus magus (magus cone)  
C:Date: 27-Mar-1997 #sequence\_revision 11-Apr-1997 #text\_change 16-Jul-1999  
C:Accession: A58537  
R:Monje, V.D.; Haack, J.A.; Nalibitt, S.R.; Miljanich, G.; Ramachandran, J.; Nadasdi  
Neuropharmacology 32, 1141-1149, 1993  
A:Title: A new Conus peptide ligand for Ca channel subtypes.  
A:Reference number: A58537; MUID:94150815; PMID:8107968  
A:Accession: A58537  
A:Molecule type: mRNA  
A:Residues: 1-29 <MON>  
A:Cross-references: GB:S69322; NID:9545399; PIDN:AB29902.1; PID:9545400  
A:Note: the predicted peptide was chemically synthesized and alternative disulfide bo  
C:Superfamily: omega-conotoxin  
C:Keywords: toxin; venom  
F:4-29/Product: omega-conotoxin MVITD #status predicted <MAT>  
F:4-19,11-23,18-28/Disulfide bonds: #status predicted

Query Match 61.4%; Score 94; DB 2; Length 29;  
Best Local Similarity 52.0%; Pred. No. 0.00029;  
Matches 13; Conservative 4; Mismatches 8; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIVANCCTGSCRSRGC 25  
||| | ||| : ||| ||| ||| |||  
Db 4 CCGRGASCRMTYDCSGSCGRRC 28

## RESULT 5

omega-conotoxin SYTB [validated] - cone shell (Conus striatus)  
C44379  
N:Alternate names: SNX-183  
C:Species: Conus striatus (striated cone)  
C:Date: 31-Dec-1993 #sequence\_revision 31-Dec-1993 #text\_change 15-Sep-2000  
C:Accession: C44379  
R:Ramilo, C.A.; Zafaralla, G.C.; Nadasdi, L.; Hammerland, L.G.; Yoshikami, D.; Gray,  
Biochemistry 31, 9919-9926, 1992  
A:Title: Novel alpha- and omega-conotoxins from Conus striatus venom.  
A:Reference number: A44379; MUID:93003172; PMID:1390774  
A:Accession: C44379  
A:Molecule type: protein  
A:Residues: 1-26 <RAM>  
A:Cross-references: CAS:143306-19-8  
A:Experimental source: venom  
A:Note: sequence extracted from NCBI backbone (NCBIP:116002); structure confirmed by  
R:Nielsen, K.U.; Thomas, L.; Lewis, R.J.; Alewood, P.F.; Craik, D.J.  
submitted to the Brookhaven Protein Data Bank, August 1996  
A:Reference number: A67649; PDB:1WVJ  
A:Contents: annotation; conformation by (1)H-NMR, residues 1-26  
J. Mol. Biol. 263, 297-310, 1996  
A:Title: A consensus structure for omega-conotoxins with different selectivities for  
A:Reference number: A58619; MUID:97070382; PMID:8913308  
A:Contents: annotation; conformation by (1)H-NMR  
C:Comment: This omega-conotoxin blocks presynaptic calcium channels.  
C:Superfamily: omega-conotoxin  
C:Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel  
F:1-16,8-20,15-26/Disulfide bonds: #status predicted  
F:26/Modified site: amidated carboxyl end (Cys) #status experimental





A:Reference number: A51089; PDB:1CCO  
 A:Contents: annotation; conformation by (1)H-NMR, residues 46-72  
 C:Comment: There are several types of conotoxins: alpha, acting on postsynaptic membrane neurotoxin.  
 C:Superfamily: omega-conotoxin  
 C:Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel inh  
 F:1-22/Domain: signal sequence #status predicted <SIG>  
 F:23-45/Domain: propeptide #status predicted <PRO>  
 F:46-73/Product: omega-conotoxin GVIA #status experimental <MAT1>  
 F:46-73/Product: omega-conotoxin GVIA #status experimental <MAT2>  
 F:46-71/Product: omega-conotoxin GVIC #status experimental <MAT3>  
 F:46-61,53-64,60-71/Disulfide bonds: #status experimental  
 F:49,55,66/Modified site: 4-hydroxyproline (Pro) #status experimental  
 F:72/Modified site: amidated carboxyl end (Tyr) (amide in mature form from following gly

Query Match 40.2%; Score 61.5; DB 1; Length 73;  
 Best Local Similarity 55.0%; Pred. No. 2.2;  
 Matches 11; Conservative 1; Mismatches 7; Indels 1; Gaps 1;

QY 1 CKGTGKPCSRIRAYNCTGSC 20  
 DB 46 CKSPGSSCSPTSYNCCR-SC 64

## RESULT 10

ORXLLI  
 A:Reference number: A51089; PDB:1CCO  
 A:Contents: annotation; conformation by (1)H-NMR, residues 46-72  
 C:Comment: There are several types of conotoxins: alpha, acting on postsynaptic membrane neurotoxin.  
 C:Superfamily: omega-conotoxin  
 C:Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel inh  
 F:1-22/Domain: signal sequence #status predicted <SIG>  
 F:23-45/Domain: propeptide #status predicted <PRO>  
 F:46-73/Product: omega-conotoxin GVIA #status experimental <MAT1>  
 F:46-73/Product: omega-conotoxin GVIA #status experimental <MAT2>  
 F:46-71/Product: omega-conotoxin GVIC #status experimental <MAT3>  
 F:46-61,53-64,60-71/Disulfide bonds: #status experimental  
 F:49,55,66/Modified site: 4-hydroxyproline (Pro) #status experimental  
 F:72/Modified site: amidated carboxyl end (Tyr) (amide in mature form from following gly

Query Match 40.2%; Score 61.5; DB 1; Length 909;  
 Best Local Similarity 40.6%; Pred. No. 10;  
 Matches 13; Conservative 5; Mismatches 7; Indels 7; Gaps 2;

QY 1 CKG-----TGKPCSRIRAYNCTGSC--RSGKC 25  
 DB 183 CEGEPKPTKDKPCSPLEFHCGSGCEIMSMKC 214

## RESULT 11

S12513  
 delta-conotoxin TxVIA precursor - cone shell (Conus textile)  
 N:Alternate names: conotoxin Ia; King-Kong peptide (KK-0)  
 C:Species: Conus textile (cloth-of-gold cone)  
 C:Date: 19-Mar-1997 #sequence\_revision 11-Apr-1997 #text\_change 16-Jul-1999  
 C:Accession: S12513; A30103; S19553  
 R:Woodward, S.R.; Cruz, L.J.; Olivera, B.M.; Hillyard, D.R.  
 EMBL J. 9, 1015-1020, 1990  
 A:Title: Constant and hypervariable regions in conotoxin propeptides.  
 A:Reference number: S12513; MUID:90214607; PMID:1691090  
 A:Accession: S12513  
 A:Molecule type: mRNA  
 A:Residues: 1-78 <MOO>  
 A:Cross-references: EMBL:X53283; NID:q10887; PIDN:CAA37377.1; PID:q10888  
 R:Hillyard, D.R.; Olivera, B.M.; Woodward, S.; Corpuz, G.P.; Gray, W.R.; Ramallo, C.A.  
 Biochemistry 28, 358-361, 1989  
 A:Title: A molluscivorous Conus toxin: conserved frameworks in conotoxins.  
 A:Reference number: A30103; MUID:89207553; PMID:2706261  
 A:Accession: A30103  
 A:Molecule type: protein  
 A:Residues: 52-78 <HIL>  
 R:Palniziber, M.; Gordon, D.; Hasson, A.; Spira, M.E.; Zlotkin, E.  
 Eur. J. Biochem. 202, 589-595, 1991  
 A:Title: Mollusc-specific toxins from the venom of Conus textile neovicarius.  
 A:Reference number: S19553; MUID:92104183; PMID:1761058  
 A:Accession: S19553  
 A:Molecule type: protein  
 A:Residues: 52-78 <PAI>  
 C:Superfamily: omega-conotoxin  
 C:Keywords: neurotoxin; sodium channel inhibitor; venom  
 F:1-22/Domain: signal sequence #status predicted <SIG>  
 F:23-51/Domain: propeptide #status predicted <PRO>  
 F:52-78/Product: delta-conotoxin TxVIA #status experimental <MAT>  
 F:53-68,60-72,67-77/Disulfide bonds: #status predicted

Query Match 39.9%; Score 61; DB 2; Length 78;  
 Best Local Similarity 45.0%; Pred. No. 2.6;  
 Matches 9; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIRAYNCTGSC 20  
 DB 53 CKQSGEMCNLDONCCDGYC 72

## RESULT 12

S54085  
 probable membrane protein YPR064w - yeast (Saccharomyces cerevisiae)  
 N:Alternate names: hypothetical protein YP9499.19  
 C:Species: Saccharomyces cerevisiae  
 C:Date: 08-Jul-1995 #sequence\_revision 19-Oct-1995 #text\_change 19-Apr-2002  
 C:Accession: S54085  
 R:Backock, K.; Churcher, C.M.  
 submitted to the EMBL Data Library, May 1995  
 A:Reference number: S54059  
 A:Accession: S54085  
 A:Molecule type: DNA  
 A:Residues: 1-139 <BAD>  
 A:Cross-references: EMBL:Z49219; NID:9805025; PID:9805044; GSPDB:GN00016; MIPS:YPR064  
 A:Experimental source: strain AB972  
 C:Genetics:  
 A:Gene: MIPS:YPR064w  
 A:Cross-references: SGD:S0006268  
 A:Map position: 16R  
 C:Superfamily: Saccharomyces cerevisiae probable membrane protein YPR064w  
 C:Keywords: transmembrane protein  
 F:39-55/Domain: transmembrane #status predicted <TM1>  
 F:123-139/Domain: transmembrane #status predicted <TM2>



```

F:4092-4130/Domain: EGF homology <EGF2>
F:4343-4386/Domain: LDL receptor YWTD-containing repeat homology <YW38>

Query Match      39.28; Score 60; DB 1; Length 4753;
Best Local Similarity 43.58; Pred. No. 42;
Matches 10; Conservative 2; Mismatches 11; Indels 0; Gaps 0;

QY      1  CKGTGKPCSRIRAYNCCTGSCRSQ 23
          | | | | | : | | | | |
Db      3871  CGGTRPCSESEFRCNDGKCIPG 3893

Search completed: July 1, 2003, 10:53:26
Job time : 8.03125 secs
    
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GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 1, 2003, 10:43:27 ; Search time 6.77083 Seconds

(without alignments)  
153.143 Million cell updates/sec

Title: US-09-910-082a-375

Perfect score: 153

Sequence: 1 CKGTGKPCSRIVANCTGSCRSRKC 25

Scoring table: BLOSUM62

Gapop 10.0 , Gapept 0.5

Searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SWISSProt\_40:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Length	ID	Description
1	142	92.8	71 1	09x2K2 conus stria
2	121	79.1	71 1	P05484 conus magus
3	112	73.2	71 1	P58917 conus catus
4	105	68.6	25 1	P05485 conus magus
5	104.5	68.3	26 1	P58919 conus catus
6	101	66.0	25 1	P58918 conus catus
7	99	64.7	27 1	P58916 conus conso
8	98.5	64.4	29 1	P37300 conus magus
9	94	61.4	29 1	P28881 conus stria
10	89.5	58.5	72 1	P58920 conus stria
11	84	54.9	73 1	P58914 conus stria
12	69.5	45.4	27 1	P58914 conus stria
13	67.5	44.1	29 1	P05483 conus geogr
14	62.5	40.8	26 1	P56714 conus texti
15	61.5	40.2	73 1	P01522 conus geogr
16	61.5	40.2	73 1	P01522 conus geogr
17	61	39.9	78 1	P18911 conus texti
18	60	39.2	27 1	P24159 conus texti
19	60	39.2	72 1	P28880 conus stria
20	60	39.2	72 1	P04833 caenorhabd
21	59.5	38.9	26 1	P58915 conus tulip
22	59.5	38.9	52 1	O10286 origyia pseu
23	59	38.6	72 1	O9x2L5 conus stria
24	58.5	38.2	892 1	O99088 xenopus lae
25	58	37.9	72 1	O9x2I4 conus stria
26	57.5	37.6	1291 1	O19981 caenorhabd
27	56.5	36.9	37 1	P81599 hadronyche
28	56	36.6	1408 1	P18168 drosophila
29	56	36.6	4543 1	P98157 gallus gall
30	56	36.6	4544 1	O07954 homo sapien
31	56	36.6	4660 1	P98158 homo sapien
32	55	35.9	385 1	O09163 mus musculu
33	54	35.3	864 1	P35951 mus musculu

34	53.5	35.0	491 1	K2M2_SHEEP	P15241 ovis aries
35	53	34.6	64 1	MTR_SRRPU	P04734 strongyloce
36	53	34.6	860 1	LDLR_HUMAN	P01130 homo sapien
37	53	34.6	4655 1	LRP2_HUMAN	P98164 homo sapien
38	52.5	34.3	72 1	MT12_MYED	P80247 mytilus edu
39	52	34.0	245 1	CRS3_HORSE	O19010 equus cabal
40	51.5	33.7	37 1	TRP3_APTSC	P49268 aptostichus
41	51.5	33.7	65 1	MTR_SRRPU	O27287 strongyloce
42	51.5	33.7	1172 1	TSP2_MOUSE	O03350 mus musculu
43	51	33.3	77 1	CKR1_CONTE	P18512 conus texti
44	51	33.3	212 1	AG1_HORVU	P15312 hordeum vul
45	51	33.3	615 1	FAI2_HUMAN	P00748 homo sapien

## ALIGNMENTS

RESULT 1	ID	Query Length	STANDARD	PRT	71 AA.
AC	09x2K2	92.8	35.0	491 1	K2M2_SHEEP
DF	16-OCT-2001 (Rel. 40, Created)	35.0	34.6	64 1	MTR_SRRPU
DF	16-OCT-2001 (Rel. 40, Last sequence update)	34.6	34.6	860 1	LDLR_HUMAN
DF	15-JUN-2002 (Rel. 41, Last annotation update)	34.6	34.6	4655 1	LRP2_HUMAN
DE	Omega-type conotoxin S03 precursor.	34.3	34.0	72 1	MT12_MYED
GN	S03	34.0	33.7	245 1	CRS3_HORSE
OS	Conus striatus (Striated cone).	33.7	33.7	37 1	TRP3_APTSC
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;	33.7	33.7	65 1	MTR_SRRPU
OC	Neogastropoda; Conidae; Conus.	33.7	33.7	1172 1	TSP2_MOUSE
OX	NCBI_TaxID=6493;	33.3	33.3	77 1	CKR1_CONTE
RN	[1]	33.3	33.3	212 1	AG1_HORVU
RP	SEQUENCE FROM N.A.	33.3	33.3	615 1	FAI2_HUMAN
RC	TISSUE=Venom duct;	35.0	34.6	64 1	MTR_SRRPU
RX	MEDLINE=20037955; PubMed=10573284;	34.6	34.6	860 1	LDLR_HUMAN
RA	Lu B.-S., Yu F., Zhao D., Huang P.-T., Huang C.-F.;	34.6	34.6	4655 1	LRP2_HUMAN
RT	"Conopeptides from Conus striatus and Conus textile by cDNA	34.0	34.0	72 1	MT12_MYED
RT	cloning.";	33.7	33.7	245 1	CRS3_HORSE
RL	Peptides 20:1139-1144(1999).	33.7	33.7	37 1	TRP3_APTSC
CC	- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind	33.7	33.7	65 1	MTR_SRRPU
CC	and block voltage-sensitive calcium channels (VSCC) (By	33.7	33.7	1172 1	TSP2_MOUSE
CC	similarity).	33.7	33.7	77 1	CKR1_CONTE
CC	- SUBCELLULAR LOCATION: Secreted (By similarity).	33.7	33.7	212 1	AG1_HORVU
CC	- TISSUE SPECIFICITY: Expressed by the venom duct.	33.7	33.7	615 1	FAI2_HUMAN
CC	- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE	33.7	33.7	77 1	CKR1_CONTE
CC	FAMILY.	33.7	33.7	212 1	AG1_HORVU
CC	This SWISS-PROT entry is copyright. It is produced through a collaboration	33.7	33.7	615 1	FAI2_HUMAN
CC	between the Swiss Institute of Bioinformatics and the EMBL outstation -	33.7	33.7	77 1	CKR1_CONTE
CC	the European Bioinformatics Institute. There are no restrictions on its	33.7	33.7	212 1	AG1_HORVU
CC	use by non-profit institutions as long as its content is in no way	33.7	33.7	615 1	FAI2_HUMAN
CC	modified and this statement is not removed. Usage by and for commercial	33.7	33.7	77 1	CKR1_CONTE
CC	entities requires a license agreement (See http://www.isb-sdb.ch/announce/	33.7	33.7	212 1	AG1_HORVU
CC	or send an email to license@isb-sdb.ch).	33.7	33.7	615 1	FAI2_HUMAN
CC	-----	33.7	33.7	77 1	CKR1_CONTE
DR	EMBL: AF146348; AAD31908.1; -	33.7	33.7	212 1	AG1_HORVU
DR	HSSP: P05484; LMY1.	33.7	33.7	615 1	FAI2_HUMAN
DR	InterPro: IPR004214; Conotoxin.	33.7	33.7	77 1	CKR1_CONTE
DR	Plant: PF02950; Conotoxin; 1.	33.7	33.7	212 1	AG1_HORVU
KW	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;	33.7	33.7	615 1	FAI2_HUMAN
FT	Signal: Amidation.	33.7	33.7	77 1	CKR1_CONTE
FT	SIGNAL	1	22	POTENTIAL.	POTENTIAL.
FT	PROPEP	23	44	POTENTIAL.	POTENTIAL.
FT	PEPTIDE	45	70	OMEGA-TYPE CONOTOXIN S03.	OMEGA-TYPE CONOTOXIN S03.
FT	DISULFID	46	61	BY SIMILARITY.	BY SIMILARITY.
FT	DISULFID	53	65	BY SIMILARITY.	BY SIMILARITY.
FT	DISULFID	60	70	BY SIMILARITY.	BY SIMILARITY.
FT	MOD_RES	70	70	AMIDATION (S-71 PROVIDE AMIDE GROUP)	AMIDATION (S-71 PROVIDE AMIDE GROUP)
SO	SEQUENCE	71 AA;	7628 MM;	CE7070DCE3094D33 CRC64;	CE7070DCE3094D33 CRC64;
Query Match	92.8%;	Score 142;	DB 1;	Length 71;	Length 71;
Best Local Similarity	92.0%;	Pred. No. 7.2e-11;	Mismatches 2;	Indels 0;	Gaps 0;
Matches 23;	Conservative	0;	Mismatches 2;	Indels 0;	Gaps 0;

OY 1 CKGTGKPCSRIRAYNCTGSCRSKGC 25  
 11:|||||  
 DB 46 CKAGKPCSRIRAYNCTGSCRSKGC 70

RESULT 2  
 CXOA\_CONMA STANDARD; PRT; 71 AA.  
 AC P05484;  
 DT 01-NOV-1988 (Rel. 09, Created)  
 DT 15-JUN-2002 (Rel. 41, Last sequence update)  
 DT 15-JUN-2002 (Rel. 41, Last annotation update)  
 DE Omega-conotoxin MVIIA precursor (SNX-111) (Ziconotide).  
 OS Conus magus (Magus cone).  
 OS Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OX NCBI\_TaxID=6492;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=Venom duct;  
 RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,  
 RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,  
 RA Matheson J., Drinkwater R., Andrews P.R., Alewood P.F.;  
 RT "Novel omega-conotoxins from Conus catus discriminate among neuronal  
 RT calcium channel subtypes.";  
 RL J. Biol. Chem. 275:35355-35344(2000).  
 RN [2]  
 RP SEQUENCE OF 46-70.  
 RA MEDLINE=86070213; PubMed=4071055;  
 RA Oliveira B.M., Gray W.R., Zeikus R.D., McIntosh J.M., Varga J.,  
 RA Rivier J.E., de Santos V., Cruz L.J.;  
 RT "Peptide neurotoxins from fish-hunting cone snails.";  
 RL Science 230:1338-1343(1985).  
 RN [3]  
 RP SEQUENCE OF 46-70.  
 RA MEDLINE=87299637; PubMed=2441741;  
 RA Oliveira B.M., Cruz L.J., de Santos V., Lechmanant G.W., Griffin D.,  
 RA Zeikus R.D., McIntosh J.M., Galyan R., Varga J., Gray W.R.,  
 RA Rivier J.E.;  
 RT "Neuronal calcium channel antagonists. Discrimination between calcium  
 RT channel subtypes using omega-conotoxin from Conus magus venom.";  
 RL Biochemistry 26:2086-2090(1987).  
 RN [4]  
 RP DISULFIDE BONDS.  
 RA PubMed=8537186;  
 RA Chung D., Gaur S., Bell J.R., Ramachandran J., Nadasdi L.;  
 RT "Determination of disulfide bridge pattern in omega-conopeptides.";  
 RL Int. J. Pept. Protein Res. 46:320-325(1995).  
 RN [5]  
 RP SYNTHESIS, AND MUTAGENESIS OF LYS-47 AND TYR-58.  
 RA PubMed=7826361;  
 RA Kim J.I., Takahashi M., Ohtake A., Wakamiya A., Sato K.;  
 RT "Tyr13 is essential for the activity of omega-conotoxin MVIIA and  
 RT GVIA, specific N-type calcium channel blockers.";  
 RL Biochem. Biophys. Res. Commun. 206:449-454(1995).  
 RN [6]  
 RP STRUCTURE BY NMR.  
 RA MEDLINE=95367555; PubMed=7640281;  
 RA Kohno T., Kim J.-I., Kobayashi K., Kodera Y., Maeda T., Sato K.;  
 RT "Three-dimensional structure in solution of the calcium channel  
 RT blocker omega-conotoxin MVIIA.";  
 RL Biochemistry 34:10256-10265(1995).  
 RN [7]  
 RP STRUCTURE BY NMR.  
 RA PubMed=7656969;  
 RA Basus V.J., Nadasdi L., Ramachandran J., Miljanich G.P.;  
 RT "Solution structure of omega-conotoxin MVIIA using 2D NMR  
 RT spectroscopy.";  
 RL FEBS Lett. 370:163-169(1995).  
 RN [8]  
 RP STRUCTURE BY NMR.

BX MEDLINE=97070382; PubMed=8913308;  
 RA Nielsen K.J., Thomas L., Lewis R.J., Alewood P.F., Craik D.J.;  
 RT "A consensus structure for omega-conotoxins with different  
 RT selectivities for voltage-sensitive calcium channel subtypes:  
 RT comparison of MVIIA, SVIB and SNX-202.";  
 RL J. Mol. Biol. 263:297-310(1996).  
 RN [9]  
 RP STRUCTURE BY NMR.  
 RA PubMed=10373375;  
 RA Nielsen K.J., Adams D., Thomas L., Bond T., Alewood P.F., Craik D.J.,  
 RA Lewis R.J.;  
 RT "Structure-activity relationships of omega-conotoxins MVIIA, MVIIIC and  
 RT 14 loop splice hybrids at N and P/Q-type calcium channels.";  
 RL J. Mol. Biol. 289:1405-1421(1999).  
 RN [10]  
 RP STRUCTURE BY NMR.  
 RA PubMed=10747778;  
 RA Atkinson R.A., Kieffer B., Dejaegere A., Sirockin F., Lefevre J.-F.;  
 RT "Structural and dynamic characterization of omega-conotoxin MVIIA: the  
 RT binding loop exhibits slow conformational exchange.";  
 RL Biochemistry 39:3908-3919(2000).  
 RN [11]  
 RP STRUCTURE BY NMR.  
 RA MEDLINE=21243158; PubMed=11344322;  
 RA Goldenberg D.P., Koehn R.E., Gilbert D.E., Wagner G.;  
 RT "Solution structure and backbone dynamics of an omega-conotoxin  
 RT precursor.";  
 RL Protein Sci. 10:538-550(2001).  
 CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind  
 CC and block voltage-sensitive calcium channels (VSCC). This toxin  
 CC blocks N-type calcium channels.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.  
 CC -1- PHARMACEUTICAL: Is under clinical trial by Neurx. It blocks acute  
 CC pain in patients who no longer obtain relief from opiate drugs. It  
 CC is 100 to 1000 times more potent than morphine. By blocking  
 CC calcium channels it disable nerves that transmit pain signals.  
 CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE  
 CC FAMILY.  
 CC -1- DATABASE: NAME=Ziconotide Source, NOTE=web site on ziconotide;  
 CC WWW=http://docmd.com/ziconotide/".  
 CC DR PIR: C60133; C60133.  
 CC DR PIR: JH0700; JH0700.  
 CC DR PDB: 1OMG; 03-APR-96.  
 CC DR PDB: 1MW1; 12-AUG-97.  
 CC DR PDB: 1DW4; 01-MAR-00.  
 CC DR PDB: 1DW5; 01-MAR-00.  
 CC DR PDB: 1FEO; 23-AUG-00.  
 CC KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;  
 CC KW Amlatation; Signal; 3D-structure; Pharmaceutical.  
 FT STGNAL 1 22  
 FT PROPEP 23 45  
 FT PEPTIDE 46 70  
 FT DISULFID 46 61  
 FT DISULFID 53 65  
 FT DISULFID 60 70  
 FT MOD RES 70 70  
 FT MUTAGEN 47 47  
 FT 58  
 SQ SEQUENCE 71 AA; 7587 MW; E2A32725C81AF3D C8C64;  
 Query Match 79.1%; Score 121; DB 1; Length 71;  
 Best Local Similarity 76.0%; Pred. No. 2.3e-08;  
 Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

ID	CXOB_CONMA	STANDARD:	PRT:	25 AA.
AC	P05485.			
AD	01-NOV-1988 (Rel. 09, Created)			
AE	01-NOV-1988 (Rel. 09, Last sequence update)			
AF	15-JUN-2002 (Rel. 41, Last annotation update)			
AG	Omega-conotoxin CIVA precursor.			
AH	OS Conus catus (Cat cone).			
AI	Eukaryota: Metazoa: Mollusca: Gastropoda: Caenogastropoda:			
AJ	Neogastropoda: Conoidea: Conidae: Conus.			
AK	NCBI_TaxID=101291;			
AL	[1]			
AM	SEQUENCE FROM N.A., SEQUENCE OF 46-70, AND SYNTHESIS.			
AN	TISSUE-Venom duct, and Venom;			
AO	PubMed-10938268;			
AP	Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,			
AQ	Sharpe I.A., Lucifian T., Adams D.J., Bond T., Thomas L., Jones A.,			
AR	Matheson J.-L., Drinkwater R., Andrews P.R., Alewood P.F.;			
AS	*Novel omega-conotoxins from Conus catus discriminate among neuronal			
AT	calcium channel subtypes.*			
AV	J. Biol. Chem. 275:3535-35344(2000).			
AW	-1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind			
AX	and block voltage-sensitive calcium channels (VSCC) (By			
AY	similarity). This toxin blocks N-type calcium channels.			
AZ	-1- SUBCELLULAR LOCATION: Secreted.			
BA	-1- TISSUE SPECIFICITY: Expressed by the venom duct.			
BB	-1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE			
BC	FAMILY.			
BD	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;			
BE	Amidation; Signal.			
BF	FT SIGNAL	1	22	POTENTIAL.
BG	FT PROPER	23	45	
BH	FT PEPTIDE	46	70	OMEGA-CONOTOXIN CIVA.
BI	FT DISULFID	46	61	BY SIMILARITY.
BJ	FT DISULFID	53	65	BY SIMILARITY.
BK	FT DISULFID	60	70	BY SIMILARITY.
BL	FT MOD.RES	70	70	AMIDATION (G-71 PROVIDE AMIDE GROUP).
BM	SEQUENCE	71 AA:	7665 MW;	B99D9C7C74936D01 CRC64;
BN	Query Match	73.2%;	Score 112;	DB 1; Length 71;
BO	Best Local Similarity	68.0%;	Pred. NO. 2.7e-07;	
BP	Matches 17; Conservative	3; Mismatches	5; Indels	0; Gaps
BQ	1 CKGTGKPCSRATVYNCCTGSCRSRGK 25			
BR	46 CKSTGASCRKRTSYDCTGSCRSRGK 70			
BS	: : :             :			
BT	RESULT 4			
BU	CXOB_CONMA			
BV	ID			
BW	AC	P05485.		
BX	01-NOV-1988 (Rel. 09, Created)			
BY	01-NOV-1988 (Rel. 09, Last sequence update)			
BZ	15-JUN-2002 (Rel. 41, Last annotation update)			
CA	Omega-conotoxin MVIID (SNX-159).			
CB	OS Conus magus (Magus cone).			
CC	Eukaryota: Metazoa: Mollusca: Gastropoda: Caenogastropoda:			
CD	Neogastropoda: Conoidea: Conidae: Conus.			
CE	NCBI_TaxID=6492;			
CF	[1]			
CG	SEQUENCE.			
CH	MEDLINE-87299637; PubMed-2441741;			
CI	RA Oliver R.B., Cruz L.J., de Santos V., Iechemiant G.W., Griffin D.,			
CJ	Zelkus R.D., McIntosh J.M., Galyean R., Variga J., Gray W.R.,			
CK	Rivier J.E.;			
CL	*Neuronal calcium channel antagonists. Discrimination between calcium			
CM	channel subtypes using omega-conotoxin from Conus magus venom.*;			
CN	Biochemistry 26:2086-2090(1987).			
CO	-1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind			
CP	and block voltage-sensitive calcium channels (VSCC).			
CQ	-1- SUBCELLULAR LOCATION: Secreted.			
CR	-1- TISSUE SPECIFICITY: Expressed by the venom duct.			
CS	-1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE			
CT	FAMILY.			

DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25	SEQUENCE	25 AA; 2626 MW; E4B9CE5EFA3734D CRC64;
OY	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	DB	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	Query Match	Best Local Similarity	68.6%;	Score 105;	DB 1;	Length 25;	Matches	16;	Conservative	2;	Mismatches	7;	Indels	0;	Gaps	0;		
DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25	SEQUENCE	25 AA; 2626 MW; E4B9CE5EFA3734D CRC64;
OY	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	DB	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	Query Match	Best Local Similarity	68.6%;	Score 105;	DB 1;	Length 25;	Matches	16;	Conservative	2;	Mismatches	7;	Indels	0;	Gaps	0;		
DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25	SEQUENCE	25 AA; 2626 MW; E4B9CE5EFA3734D CRC64;
OY	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	DB	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	Query Match	Best Local Similarity	68.6%;	Score 104.5;	DB 1;	Length 26;	Matches	17;	Conservative	4;	Mismatches	4;	Indels	1;	Gaps	1;		
DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25	SEQUENCE	26 AA; 2790 MW; 56EFC38235C4A8B CRC64;
OY	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	DB	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	Query Match	Best Local Similarity	68.3%;	Score 104.5;	DB 1;	Length 26;	Matches	17;	Conservative	4;	Mismatches	4;	Indels	1;	Gaps	1;		
DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25	SEQUENCE	26 AA; 2790 MW; 56EFC38235C4A8B CRC64;
OY	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	DB	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	Query Match	Best Local Similarity	68.3%;	Score 104.5;	DB 1;	Length 26;	Matches	17;	Conservative	4;	Mismatches	4;	Indels	1;	Gaps	1;		
DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25	SEQUENCE	26 AA; 2790 MW; 56EFC38235C4A8B CRC64;
OY	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	DB	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	Query Match	Best Local Similarity	68.3%;	Score 104.5;	DB 1;	Length 26;	Matches	17;	Conservative	4;	Mismatches	4;	Indels	1;	Gaps	1;		
DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25	SEQUENCE	26 AA; 2790 MW; 56EFC38235C4A8B CRC64;
OY	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	DB	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	Query Match	Best Local Similarity	68.3%;	Score 104.5;	DB 1;	Length 26;	Matches	17;	Conservative	4;	Mismatches	4;	Indels	1;	Gaps	1;		
DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25	SEQUENCE	26 AA; 2790 MW; 56EFC38235C4A8B CRC64;
OY	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	DB	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	Query Match	Best Local Similarity	68.3%;	Score 104.5;	DB 1;	Length 26;	Matches	17;	Conservative	4;	Mismatches	4;	Indels	1;	Gaps	1;		
DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25	SEQUENCE	26 AA; 2790 MW; 56EFC38235C4A8B CRC64;
OY	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	DB	1 CKGTGKPCSRATVNCCTGSCRSKGC 25	Query Match	Best Local Similarity	68.3%;	Score 104.5;	DB 1;	Length 26;	Matches	17;	Conservative	4;	Mismatches	4;	Indels	1;	Gaps	1;		
DR	PIR: B34115- DR JH0701, JH0701. HSSP: P05484, LMVI.	DR	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation.	FT	DISULFID	1	16	FT	DISULFID	8	20	FT	DISULFID	15	25	FT	MOD_RES	25	25		





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CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY
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CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation
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CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sdb.ch/announce/
CC or send an email to license@sdb.ch).
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CC EMBL: S40826; AAB22674.1; -
CC DR PIR: JH0699; JH0699.
CC DR PDB: 1OMN; 01-DEC-95.
CC DR PDB: 1CNR; 31-MAY-00.
CC KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
CC Hydroxylation; Amidation; 3D-structure.
CC FT NON_TER 1 1
CC FT PROPEP <1 2
CC FT PEPTIDE 3 28 OMEGA-CONOTOXIN MYIT.
CC FT BINDING 15 15 ESSENTIAL FOR CALCIUM CHANNEL BINDING.
CC FT DISULFID 3 18
CC FT DISULFID 10 22
CC FT DISULFID 17 28
CC FT MOD.RES 9 9 HYDROXYLATION (PROBABLE).
CC FT MOD.RES 28 28 AMIDATION (G-29 PROVIDE AMIDE GROUP).
CC FT MUTAGEN 15 15 Y->A: HIGH DECREASE IN BINDING.
CC SQ SEQUENCE 29 AA; 3071 MW; AC7A68948474728A CRC64;

Query Match
Best Local Similarity 64.4%; Score 98.5; DB 1; Length 29;
Best Local Similarity 61.5%; Pred. No. 5.6e-06;
Matches 16; Conservative 3; Mismatches 6; Indels 1; Gaps 1;

QY 1 CKGTGKPCSRIVNCTGSC-RSGKC 25
DB 3 CKGKGAFCRMTYDCCSGSGRRGKC 28

RESULT 9
CXOD_CONMA STANDARD; PRT; 29 AA.
ID CXOD_CONMA STANDARD; PRT; 29 AA.
AC Q26350;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin WY1D precursor (SNX-238) (Fragment).
OS Conus magus (Magus cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6492;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=94150815; PubMed=8107968;
RA Monte V.D., Hack J.A., Naisbitt S.R., Miljanich G., Ramachandran J.,
RA Nadasdes L., Oliveira B.M., Hilliard D.R., Gray W.R.;
RT "A new Conus peptide ligand for Ca channel subtypes.";
RL Neuroparmacology 32:1141-1149(1993).
RN [2]
RP STRUCTURE BY NMR.
RX PubMed=9920728;
RA Civera C., Vazquez A., Sevilla J.M., Bruix M., Gago F., Garcia A.G.,
RA Sevilla P.;
RT "Solution structure determination by two-dimensional 1H NMR of
RT omega-conotoxin WY1D, a calcium channel blocker peptide.";
RL Biochem. Biophys. Res. Commun. 254:32-35(1999).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC). This toxin
CC blocks channels of the N-type as well as other types.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.

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CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY
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CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sdb.ch/announce/
CC or send an email to license@sdb.ch).
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CC EMBL: S69322; AAB29902.1; -
CC DR HSSP; P05484; 1MYI.
CC KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
CC Amidation.
CC FT NON_TER 1 1
CC FT PROPEP <1 3
CC FT PEPTIDE 4 28 OMEGA-CONOTOXIN MYITD.
CC FT DISULFID 4 19
CC FT DISULFID 11 23
CC FT DISULFID 18 28
CC FT MOD.RES 28 28 AMIDATION (G-29 PROVIDE AMIDE GROUP).
CC SQ SEQUENCE 29 AA; 3104 MW; 9E04B2EA3779CB22 CRC64;

Query Match
Best Local Similarity 61.4%; Score 94; DB 1; Length 29;
Best Local Similarity 52.0%; Pred. No. 1.9e-05;
Matches 13; Conservative 4; Mismatches 8; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIVNCTGSC-RSGKC 25
DB 4 CKGKGAFCRMTYDCCSGSGRRGKC 28

RESULT 10
CXOB_CONST STANDARD; PRT; 72 AA.
ID CXOB_CONST STANDARD; PRT; 72 AA.
AC P28681; Q90B25;
DT 01-DEC-1992 (Rel. 24, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin SV1B precursor (SNX-183).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=Venom duct; PubMed=10573284;
RA Lu B.-S., Yu F., Zhao D., Huang P.-T., Huang C.-F.;
RT "Conopeptides from Conus striatus and Conus textile by cDNA
RT cloning.";
RL Peptides 20:1139-1144(1999).
RN [2]
RP SEQUENCE OF 46-71, AND SYNTHESIS.
RX TISSUE=Venom;
RA MEDLINE=93003172; PubMed=1390774;
RA Ramilo C., Zafaralla G.C., Nadasdes L., Hammerland L.G., Yoshikami D.,
RA Gray W.R., Kristipati R., Ramachandran J., Miljanich G., Oliveira B.M.,
RA Cruz L.J.;
RT "Novel alpha- and omega-conotoxins from Conus striatus venom.";
RL Biochemistry 31:9919-9926(1992).
RN [3]
RP STRUCTURE BY NMR.
RX MEDLINE=9707082; PubMed=8913308;
RA Nielsen K.J., Thomas L., Lewis R.J., Alewood P.F., Craik D.J.;
RT "A consensus structure for omega-conotoxins with different
RT selectivities for voltage-sensitive calcium channel subtypes:
RT comparison of WY1A, SV1B and SNX-202.";
RL J. Mol. Biol. 263:297-310(1996).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC). This toxin
CC blocks N-, P-, and Q-type calcium channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.

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RL Science 230:1338-1343(1985).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF CONOTOXIN GVIA.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
DR PIR: A43620; A43620.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Hydroxylation.
FT MOD_RES 4 4 HYDROXYLATION.
FT MOD_RES 7 7 HYDROXYLATION.
FT DISULFID 1 16
FT DISULFID 8 19
FT DISULFID 15 26
FT VARIANT 21 21 L -> S (IN GVIB).
SQ SEQUENCE 29 AA; 3290 MW; 57307C69583FB1E7 CRC64;

Query Match 44.1%; Score 67.5; DB 1; Length 29;
Best Local Similarity 55.6%; Pred No. 0.028; Mismatches 8; Indels 3; Gaps 2;
Matches 15; Conservative 1; Mismatches 8; Indels 3; Gaps 2;

OY 1 CKGTGKPCSRVAVNCTGSC--RSGKC 25
DB 1 CKSPGTCSRGMRCCT--SCLLYSNKC 26

RESULT 14
CX07_CONGE STANDARD: PRT: 26 AA.
AC P56714;
DT 30-MAY-2000 (rel. 39, Created)
DT 30-MAY-2000 (rel. 39, Last sequence update)
DT 15-JUN-2002 (rel. 41, Last annotation update)
DE Omega-conotoxin Txvii.
OS Conus textile (Cloth-of-gold cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conidae; Conus.
OX NCBI_TaxID=6494;
RN [1]
RP SEQUENCE.
RC TISSUE-Venom;
RX MEDLINE-96266175; PubMed-8679638;
RA Fainzilber M., Lodder J.C., van der Schors R.C., Li K.W., Yu Z.,
RA Burlingame A.U., Geurts W.P.M., Kitz R.S.;
RA "A novel hydrophobic omega-conotoxin blocks molluscan dihydropyridine-
RT sensitive calcium channels."
RL Biochemistry 35:8748-8752(1996).
RN [2]
RP STRUCTURE BY NMR.
RX MEDLINE-20552922; PubMed-11101291;
RA Kobayashi K., Sasaki T., Sato K., Kohno T.;
RT "Three-dimensional solution structure of omega-conotoxin Txvii, an
RT L-type calcium channel blocker."
RL Biochemistry 39:14761-14767(2000).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC). Specifically
CC acts on L-type channels. It blocks molluscan dihydropyridine-
CC sensitive calcium channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- MASS SPECTROMETRY: MH-2832.23; METHOD-Electrospray.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
DR PDB: 1f3k; 13-DEC-00.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW 3D-structure.
FT DISULFID 1 16
FT DISULFID 8 20
FT DISULFID 15 24
SQ SEQUENCE 26 AA; 2840 MW; 3AFE2169866294 CRC64;

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Query Match 40.8%; Score 62.5; DB 1; Length 26;
Best Local Similarity 44.0%; Pred No. 0.1; Mismatches 10; Indels 1; Gaps 1;
Matches 11; Conservative 3; Mismatches 10; Indels 1; Gaps 1;

OY 1 CKGTGKPCSRVAVNCTGSCRSRGC 25
DB 1 CKQADEPCDVPSLDCTGIC-LGVC 24

RESULT 15
CX06_CONGE STANDARD: PRT: 73 AA.
AC P01522;
DT 21-JUL-1986 (rel. 01, Created)
DT 01-FEB-1994 (rel. 28, Last sequence update)
DT 15-JUN-2002 (rel. 41, Last annotation update)
DE Omega-conotoxin GVIA precursor (Shaker peptide) (SNX-124) [Contains:
DE Omega-conotoxin GVIB; Omega-conotoxin GVIC].
OS Conus geographus (Geography cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conidae; Conus.
OX NCBI_TaxID=6491;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-93069266; PubMed-1440648;
RA Colledge C.J., Hunsperger J.P., Imperial J.S., Hillyard D.R.;
RT "Precursor structure of omega-conotoxin GVIA determined from a cDNA
RT clone."
RL Toxicon 30:1111-1116(1992).
RN [2]
RP SEQUENCE OF 46-73.
RX MEDLINE-85072796; PubMed-6509012;
RA Oliveira B.M., McIntosh J.M., Cruz L.J., Luque F.A., Gray W.R.;
RT "Purification and sequence of a presynaptic peptide toxin from Conus
RT geographus venom."
RL Biochemistry 23:5087-5090(1984).
RN [3]
RP STRUCTURE BY NMR OF GVIA.
RX MEDLINE-94047089; PubMed-8230223;
RA Pallaghy P.K., Duggan B.M., Pennington M.W., Norton R.S.;
RT "Three-dimensional structure in solution of the calcium channel
RT blocker omega-conotoxin."
RL J. Mol. Biol. 234:405-420(1993).
RN [4]
RP STRUCTURE BY NMR OF GVIA.
RX MEDLINE-93332945; PubMed-8338837;
RA Davis J.H., Bradley E.K., Millanich G.P., Nadaodi L.,
RA Ramchandran J., Basus V.J.;
RT "Solution structure of omega-conotoxin GVIA using 2-D NMR
RT spectroscopy and relaxation matrix analysis."
RL Biochemistry 32:7396-7405(1993).
RN [5]
RP STRUCTURE BY NMR OF GVIA.
RX MEDLINE-99248506; PubMed-10231724;
RA Pallaghy P.K., Norton R.S.;
RT "Refined solution structure of omega-conotoxin GVIA: implications for
RT calcium channel binding."
RL J. Pept. Res. 53:343-351(1999).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
-----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
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CC or send an email to license@isb-sib.ch).
```

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CC -----
DR EMBL; M84612; AAA81590.1; -.
DR PIR; A60133; NTRNG.
DR PIR; A44006; A44006.
DR PDB; 2CCO; 15-JUL-98.
DR PDB; 1OMC; 31-JAN-94.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
DR Presynaptic neurotoxin; Neurotoxin; Calcium channel inhibitor;
KW Hydroxylation; Amidation; Signal; 3d-structure.
FT SIGNAL 1 22 POTENTIAL.
FT PROPEP 23 45
FT PEPTIDE 46 73 OMEGA-CONOTOXIN GVIB.
FT PEPTIDE 46 72 OMEGA-CONOTOXIN GVIA.
FT PEPTIDE 46 71 OMEGA-CONOTOXIN GVIC.
FT MOD_RES 49 49 HYDROXYLATION.
FT MOD_RES 55 55 HYDROXYLATION.
FT MOD_RES 66 66 HYDROXYLATION.
FT MOD_RES 72 72 AMIDATION (G-73 PROVIDE AMIDE GROUP) (IN
FT DISULFD 46 61 GVIA).
FT DISULFD 53 64
FT DISULFD 60 71
FT STRAND 47 47
FT TURN 49 50
FT STRAND 52 52
FT TURN 55 58
FT STRAND 60 60
FT STRAND 64 65
FT TURN 66 69
FT STRAND 70 71
SQ SEQUENCE 73 AA; 7851 MW; 51A8C8FA630F7175 CRC64;

Query Match 40.2%; Score 61.5; DB 1; Length 73;
Best Local Similarity 55.0%; Pred. NO. 0.29;
Matches 11; Conservative 1; Mismatches 7; Indels 1; Gaps 1;
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QY 1 CKGTGRCSTAYNCTGSC 20
DB 46 CKSPSSCSPSYNCCR-SC 64

Search completed: July 1, 2003, 10:52:51
Job time : 7.77083 secs
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GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 1, 2003, 10:42:27 ; Search time 13.2812 Seconds  
(without alignments)  
387.853 Million cell updates/sec

Title: US-09-910-082a-375

Perfect score: 153  
Sequence: 1 CKGTGKPCSRIRAYNCTGSCRSRSGKC 25

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPTREMBL\_21:\*

- 1: sp\_archaea:\*
- 2: sp\_bacteria:\*
- 3: sp\_fungi:\*
- 4: sp\_human:\*
- 5: sp\_invertebrate:\*
- 6: sp\_mammal:\*
- 7: sp\_mhc:\*
- 8: sp\_organelle:\*
- 9: sp\_phage:\*
- 10: sp\_plant:\*
- 11: sp\_protent:\*
- 12: sp\_virus:\*
- 13: sp\_vertebrate:\*
- 14: sp\_unclassified:\*
- 15: sp\_virus:\*
- 16: sp\_bacteriap:\*
- 17: sp\_archaeap:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the total score being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	142	92.8	66	5	09NCV3
2	142	92.8	66	5	09NCV2
3	142	92.8	66	5	09NCV1
4	134	87.6	66	5	09NCV6
5	134	87.6	66	5	09NCV4
6	134	87.6	66	5	09NCV0
7	134	87.6	66	5	09NCU1
8	112	73.2	66	5	09NC63
9	112	73.2	66	5	09NC62
10	112	73.2	66	5	09NC65
11	112	73.2	66	5	09NCW6
12	112	73.2	66	5	09NCW5
13	112	73.2	66	5	09NCW3
14	112	73.2	66	5	09NCW2
15	111	72.5	66	5	09NCW4
16	110	71.9	66	5	09NCW1

17	108	70.6	66	5	09NCV5	09NCV5 conus catus
18	105	68.6	66	5	09NCV7	09NCV7 conus catus
19	104	68.0	66	5	09NC67	09NC67 conus catus
20	100	65.4	66	5	09NCV6	09NCV6 conus catus
21	94	61.4	66	5	09NC68	09NC68 conus catus
22	94	61.4	66	5	09NCW0	09NCW0 conus catus
23	94	61.4	66	5	09NCV9	09NCV9 conus catus
24	85	55.6	66	5	09NCV8	09NCV8 conus catus
25	66	43.1	2664	5	026033	026033 plasmidium
26	62.5	40.8	77	5	09NC63	09NC63 conus texti
27	62.5	40.8	77	5	09NC62	09NC62 conus texti
28	61.5	40.2	50	12	0801C7	0801C7 mamestra co
29	61	39.9	78	5	09NC65	09NC65 conus texti
30	61	39.9	78	5	09NC65	09NC65 conus texti
31	61	39.9	80	5	09NC60	09NC60 conus penna
32	60.5	39.5	139	3	012492	012492 saccharomyc
33	60	39.2	67	5	09NC04	09NC04 conus stria
34	60	39.2	67	5	09NCU6	09NCU6 conus stria
35	60	39.2	67	5	09NCU3	09NCU3 conus stria
36	60	39.2	67	5	09NCU2	09NCU2 conus stria
37	59.5	38.9	73	5	09NCB4	09NCB4 conus texti
38	59	38.6	67	5	09NCU5	09NCU5 conus stria
39	59	38.6	72	5	09NCU5	09NCU5 conus stria
40	59	38.6	2150	5	044131	044131 caenorhabdi
41	58.5	38.2	52	12	09PYR8	09PYR8 xestia c-ni
42	58	37.9	72	5	09XZL4	09XZL4 archaeglob
43	58	37.9	816	17	028331	028331 archaeglob
44	57.5	37.6	73	5	09NCB2	09NCB2 conus texti
45	57.5	37.6	1329	5	09BMB0	09BMB0 caenorhabdi

#### ALIGNMENTS

RESULT 1

ID	Q9NCV3	PRELIMINARY:	PRT:	66 AA.
AC	Q9NCV3:			
DT	01-OCT-2000 (TREMBLrel. 15, Created)			
DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)			
DT	01-JUN-2002 (TREMBLrel. 21, Last annotation update)			
DE	Four-loop conotoxin (Fragment).			
OS	Conus striatus (Striated cone).			
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;			
OC	Neogastropoda; Conoidea; Conidae; Conus.			
OX	NCBI_TaxId=6493;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	STRAIN=CSTRH.1.3;			
RA	Duda T.F., Palumbi S.R.;			
RT	"Molecular evolution of four-loop conotoxin precursors from fish-			
RT	eating Conus."			
RL	Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.			
DR	EMBL; AF174242; AAF89906.1; -			
DR	HSSP; P05484; 1MYI.			
DR	InterPro: IPR004214; Conotoxin.			
DR	Pfam; PF02950; Conotoxin; 1.			
FT	NON_TER			
SO	SEQUENCE			

Query Match 92.8%; Score 142; DB 5; Length 66;  
Best Local Similarity 92.0%; Pred. No. 7.2e-14;  
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIRAYNCTGSCRSRSGKC 25  
DB 41 CKAGKPCSRIRAYNCTGSCRSRSGKC 65

RESULT 2

ID	Q9NCV2	PRELIMINARY:	PRT:	66 AA.
AC	Q9NCV2:			

DT 01-OCT-2000 (TREMblrel. 15, Created)  
DT 01-OCT-2000 (TREMblrel. 15, last sequence update)  
DT 01-JUN-2002 (TREMblrel. 21, last annotation update)  
DE Four-loop conotoxin (Fragment).  
OS Conus striatus (Striated cone).  
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
OC Neogastropoda; Conoidea; Conidae; Conus.  
OX NCBI\_TaxID=6493;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN-CSTRH\_1.4;  
RA Duda T.F., Palumbi S.R.;  
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."  
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF174243; AAF89907.1; -  
DR HSSP; P05484; 1MVI.  
DR InterPro; IPR004214; Conotoxin.  
DR Pfam; PF02950; Conotoxin; 1.  
FT NON\_TER  
SQ SEQUENCE 66 AA; 7033 MW; 887E401681A7C7B3 CRC64;  
Query Match 92.8%; Score 142; DB 5; Length 66;  
Best Local Similarity 92.0%; Pred. No. 7.2e-14;  
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
Db 41 CKAAGKPCSRIVNCTGSCRSKGC 65  
RESULT 3  
ID 09NCV1 PRELIMINARY; PRT; 66 AA.  
AC 09NCV1;  
DT 01-OCT-2000 (TREMblrel. 15, Created)  
DT 01-OCT-2000 (TREMblrel. 15, last sequence update)  
DT 01-JUN-2002 (TREMblrel. 21, last annotation update)  
DE Four-loop conotoxin (Fragment).  
OS Conus striatus (Striated cone).  
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
OC Neogastropoda; Conoidea; Conidae; Conus.  
OX NCBI\_TaxID=6493;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN-CSTRH\_1.5;  
RA Duda T.F., Palumbi S.R.;  
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."  
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF174245; AAF89909.1; -  
DR HSSP; P05484; 1MVI.  
DR InterPro; IPR004214; Conotoxin.  
DR Pfam; PF02950; Conotoxin; 1.  
FT NON\_TER  
SQ SEQUENCE 66 AA; 6976 MW; 29A992736137DA05 CRC64;  
Query Match 92.8%; Score 142; DB 5; Length 66;  
Best Local Similarity 92.0%; Pred. No. 7.2e-14;  
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
Db 41 CKAAGKPCSRIVNCTGSCRSKGC 65  
RESULT 4  
ID 09NCV6 PRELIMINARY; PRT; 66 AA.  
AC 09NCV6;  
DT 01-OCT-2000 (TREMblrel. 15, Created)  
DT 01-OCT-2000 (TREMblrel. 15, last sequence update)  
DT 01-JUN-2002 (TREMblrel. 21, last annotation update)  
OS Conus striatus (Striated cone).

DE Four-loop conotoxin precursor (Fragment).  
OS Conus striatus (Striated cone).  
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
OC Neogastropoda; Conoidea; Conidae; Conus.  
OX NCBI\_TaxID=6493;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN-CSTRH\_1.5, AND CSTRH\_1.1;  
RA Duda T.F., Palumbi S.R.;  
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."  
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF174244; AAF89908.1; -  
DR EMBL; AF174240; AAF89904.1; -  
DR HSSP; P05484; 1MVI.  
DR InterPro; IPR004214; Conotoxin.  
DR Pfam; PF02950; Conotoxin; 1.  
FT NON\_TER  
SQ SEQUENCE 66 AA; 6966 MW; 29A992710CA7DA05 CRC64;  
Query Match 87.6%; Score 134; DB 5; Length 66;  
Best Local Similarity 88.0%; Pred. No. 1.1e-12;  
Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
Db 41 CKAAGKPCSRIVNCTGSCRSKGC 65  
RESULT 5  
ID 09NCV4 PRELIMINARY; PRT; 66 AA.  
AC 09NCV4;  
DT 01-OCT-2000 (TREMblrel. 15, Created)  
DT 01-OCT-2000 (TREMblrel. 15, last sequence update)  
DT 01-JUN-2002 (TREMblrel. 21, last annotation update)  
DE Four-loop conotoxin (Fragment).  
OS Conus striatus (Striated cone).  
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
OC Neogastropoda; Conoidea; Conidae; Conus.  
OX NCBI\_TaxID=6493;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN-CSTRH\_1.2;  
RA Duda T.F., Palumbi S.R.;  
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."  
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF174241; AAF89905.1; -  
DR HSSP; P05484; 1MVI.  
DR InterPro; IPR004214; Conotoxin.  
DR Pfam; PF02950; Conotoxin; 1.  
FT NON\_TER  
SQ SEQUENCE 66 AA; 6980 MW; 286F491D7CA7DA05 CRC64;  
Query Match 87.6%; Score 134; DB 5; Length 66;  
Best Local Similarity 88.0%; Pred. No. 1.1e-12;  
Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
Db 41 CKAAGKPCSRIVNCTGSCRSKGC 65  
RESULT 6  
ID 09NCV0 PRELIMINARY; PRT; 66 AA.  
AC 09NCV0;  
DT 01-OCT-2000 (TREMblrel. 15, Created)  
DT 01-OCT-2000 (TREMblrel. 15, last sequence update)  
DT 01-JUN-2002 (TREMblrel. 21, last annotation update)  
DE Four-loop conotoxin (Fragment).  
OS Conus striatus (Striated cone).

```
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11.7;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
  eating Conus.";
RL Submitted (Aug-1999) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF174246; AAF89910.1; -.
DR HSSP; P05484; IMV1.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER
SQ SEQUENCE 66 AA: 6981 MW: 20DC33D7CA7DA05 CRC64;

Query Match      87.6%; Score 134; DB 5; Length 66;
Best Local Similarity 88.0%; Pred. No. 1.le-12;
Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRATVNCCTGSCRSKGC 25
Db 41 CKAAGKSCSRATVNCCTGSCRSKGC 65

RESULT 7
O9NCU1 PRELIMINARY: PRT: 66 AA.
AC O9NCU1;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, last sequence update)
DE 01-JUN-2002 (TREMBlrel. 21, last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11.9;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
  eating Conus.";
RL Submitted (Aug-1999) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF174267; AAF89931.1; -.
DR HSSP; P05484; IMV1.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER
SQ SEQUENCE 66 AA: 6951 MW: 0D9868C0A7A1A39F CRC64;

Query Match      87.6%; Score 134; DB 5; Length 66;
Best Local Similarity 88.0%; Pred. No. 1.le-12;
Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRATVNCCTGSCRSKGC 25
Db 41 CKAAGKSCSRATVNCCTGSCRSKGC 65

RESULT 8
O9N633 PRELIMINARY: PRT: 66 AA.
AC O9N633;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, last sequence update)
DE 01-JUN-2002 (TREMBlrel. 21, last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
```

```
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11.6, CCATH_11.1, AND CCATH_11.2;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
  eating Conus.";
RL Submitted (Aug-1999) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF174219; AAF89883.1; -.
DR EMBL; AF174214; AAF89878.1; -.
DR EMBL; AF174215; AAF89879.1; -.
DR HSSP; P05484; IMV1.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER
SQ SEQUENCE 66 AA: 7053 MW: E45338A696887DA CRC64;

Query Match      73.2%; Score 112; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2e-09;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRATVNCCTGSCRSKGC 25
Db 41 CKGTGASCRRTSYDCTGSCRSKGC 65

RESULT 9
O9N628 PRELIMINARY: PRT: 66 AA.
AC O9N628;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, last sequence update)
DE 01-JUN-2002 (TREMBlrel. 21, last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11.9, AND CCATH_11.1, 6;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
  eating Conus.";
RL Submitted (Aug-1999) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF174229; AAF89893.1; -.
DR EMBL; AF174226; AAF89890.1; -.
DR HSSP; P05484; IMV1.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER
SQ SEQUENCE 66 AA: 7057 MW: E7A5E310968B7DA CRC64;

Query Match      73.2%; Score 112; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2e-09;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRATVNCCTGSCRSKGC 25
Db 41 CKGTGASCRRTSYDCTGSCRSKGC 65

RESULT 10
O9N625 PRELIMINARY: PRT: 66 AA.
AC O9N625;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, last sequence update)
DE 01-JUN-2002 (TREMBlrel. 21, last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
```

```
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-VARIOUS STRAINS;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
  eating Conus.";
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF174228; AAF89892.1; -
DR EMBL: AF174221; AAF89885.1; -
DR EMBL: AF174222; AAF89886.1; -
DR EMBL: AF174224; AAF89888.1; -
DR EMBL: AF174225; AAF89889.1; -
DR HSSP: P05484; 1MVI.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
FT NON_TER
SQ SEQUENCE 66 AA; 7056 MW; EA11338A6968B7DA CRC64;

Query Match
Best Local Similarity 73.2%; Score 112; DB 5; Length 66;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIVAYNCTGSCRSRGC 25
DB 41 CKKGASCRRTSYDCTGSCRSRGC 65

RESULT 11
Q9NCW6 PRELIMINARY; PRT; 66 AA.
AC Q9NCW6: (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-CCATR_11.3;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
  eating Conus.";
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF174216; AAF89880.1; -
DR HSSP: P05484; 1MVI.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
FT NON_TER
SQ SEQUENCE 66 AA; 7023 MW; EA45339B6968B0AC CRC64;

Query Match
Best Local Similarity 73.2%; Score 112; DB 5; Length 66;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIVAYNCTGSCRSRGC 25
DB 41 CKKGASCRRTSYDCTGSCRSRGC 65

RESULT 12
Q9NCW5 PRELIMINARY; PRT; 66 AA.
AC Q9NCW5: (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
```

```
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-CCATR_11.4;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
  eating Conus.";
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF174217; AAF89881.1; -
DR HSSP: P05484; 1MVI.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
FT NON_TER
SQ SEQUENCE 66 AA; 7083 MW; EA45338A7939EA48 CRC64;

Query Match
Best Local Similarity 73.2%; Score 112; DB 5; Length 66;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIVAYNCTGSCRSRGC 25
DB 41 CKKGASCRRTSYDCTGSCRSRGC 65

RESULT 13
Q9NCW3 PRELIMINARY; PRT; 66 AA.
AC Q9NCW3: (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-CCATR_11.7;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
  eating Conus.";
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF174220; AAF89884.1; -
DR HSSP: P05484; 1MVI.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
FT NON_TER
SQ SEQUENCE 66 AA; 7054 MW; E9FE5E310968A1AC CRC64;

Query Match
Best Local Similarity 73.2%; Score 112; DB 5; Length 66;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIVAYNCTGSCRSRGC 25
DB 41 CKKGASCRRTSYDCTGSCRSRGC 65

RESULT 14
Q9NCW2 PRELIMINARY; PRT; 66 AA.
AC Q9NCW2: (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
```





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GenCore version 5.1.6  
Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 1, 2003, 10:52:57 ; Search time 8.85417 Seconds

(Without alignments)  
309.591 Million cell updates/sec

Title: US-09-910-082a-375

Perfect score: 153  
Sequence: 1 CKGTGKPCSRIVNCCGSCRSKRC 25

Scoring table: BIOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 424699 seqs, 109646833 residues

Total number of hits satisfying chosen parameters: 424699

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Published Applications\_AA:\*  
1: /cgn2\_6/ptodata/1/pubppaa/US08\_NEW\_PUB.pep:\*  
2: /cgn2\_6/ptodata/1/pubppaa/PCT\_NEW\_PUB.pep:\*  
3: /cgn2\_6/ptodata/1/pubppaa/US06\_NEW\_PUB.pep:\*  
4: /cgn2\_6/ptodata/1/pubppaa/US07\_NEW\_PUB.pep:\*  
5: /cgn2\_6/ptodata/1/pubppaa/US07\_NEW\_PUB.pep:\*  
6: /cgn2\_6/ptodata/1/pubppaa/US07\_NEW\_PUB.pep:\*  
7: /cgn2\_6/ptodata/1/pubppaa/US07\_NEW\_PUB.pep:\*  
8: /cgn2\_6/ptodata/1/pubppaa/US09\_NEW\_PUB.pep:\*  
9: /cgn2\_6/ptodata/1/pubppaa/US09\_NEW\_PUB.pep:\*  
10: /cgn2\_6/ptodata/1/pubppaa/US09\_NEW\_PUB.pep:\*  
11: /cgn2\_6/ptodata/1/pubppaa/US10\_NEW\_PUB.pep:\*  
12: /cgn2\_6/ptodata/1/pubppaa/US10\_NEW\_PUB.pep:\*  
13: /cgn2\_6/ptodata/1/pubppaa/US60\_NEW\_PUB.pep:\*  
14: /cgn2\_6/ptodata/1/pubppaa/US60\_NEW\_PUB.pep:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	70	45.8	1840	US-10-123-155-131	Sequence 131, App
2	69	45.1	1058	US-10-123-155-231	Sequence 231, App
3	68	44.4	2380	US-10-184-634-597	Sequence 597, App
4	68	44.4	2380	US-10-184-634-597	Sequence 597, App
5	67	43.8	708	US-10-184-634-211	Sequence 211, App
6	67	43.8	708	US-10-184-634-211	Sequence 211, App
7	67	43.8	1413	US-10-184-634-33	Sequence 33, App1
8	67	43.8	1413	US-10-184-634-33	Sequence 33, App1
9	66.5	43.5	2886	US-10-184-634-7	Sequence 7, App1
10	66.5	43.5	2886	US-10-184-634-7	Sequence 7, App1
11	66	43.1	1328	US-10-123-155-157	Sequence 157, App
12	66	43.1	1328	US-10-123-155-157	Sequence 157, App
13	66	43.1	2692	US-10-184-634-225	Sequence 225, App
14	66	43.1	2692	US-10-184-634-225	Sequence 225, App
15	66	43.1	3266	US-10-123-155-211	Sequence 211, App
16	66	43.1	3266	US-10-123-155-211	Sequence 211, App
17	65	42.5	1570	US-10-184-634-335	Sequence 335, App
18	65	42.5	1570	US-10-184-634-335	Sequence 335, App
19	65	42.5	3690	US-10-184-634-517	Sequence 517, App

20	65	42.5	3690	US-10-184-634-517	Sequence 517, App
21	65	42.5	3819	US-10-123-155-405	Sequence 405, App
22	64.5	42.2	2397	US-10-184-634-29	Sequence 29, App1
23	64.5	42.2	2397	US-10-184-634-29	Sequence 29, App1
24	64.5	42.2	3721	US-10-123-155-543	Sequence 543, App
25	64	41.8	46	US-09-894-882-377	Sequence 377, App
26	64	41.8	46	US-09-894-882-383	Sequence 383, App
27	64	41.8	46	US-09-894-882-414	Sequence 414, App
28	64	41.8	46	US-09-894-882-425	Sequence 425, App
29	64	41.8	46	US-09-894-882-437	Sequence 437, App
30	64	41.8	82	US-09-894-882-45	Sequence 45, App1
31	64	41.8	82	US-09-894-882-54	Sequence 54, App1
32	64	41.8	82	US-09-894-882-71	Sequence 71, App1
33	64	41.8	82	US-09-894-882-101	Sequence 101, App
34	64	41.8	82	US-09-894-882-122	Sequence 122, App
35	64	41.8	82	US-09-894-882-143	Sequence 143, App
36	64	41.8	1174	US-10-184-634-353	Sequence 353, App
37	64	41.8	1174	US-10-174-590-269	Sequence 353, App
38	64	41.8	1300	US-10-174-590-269	Sequence 353, App
39	64	41.8	1300	US-10-176-758-269	Sequence 269, App
40	64	41.8	1300	US-10-175-737-269	Sequence 269, App
41	64	41.8	1300	US-10-173-706-269	Sequence 269, App
42	64	41.8	1300	US-10-175-738-269	Sequence 269, App
43	64	41.8	1300	US-10-175-738-269	Sequence 269, App
44	64	41.8	1300	US-10-176-482-269	Sequence 269, App
45	64	41.8	1300	US-10-176-757-269	Sequence 269, App

#### ALIGNMENTS

RESULT 1  
US-10-123-155-131  
Sequence 131, Application US/10123155  
Publication No. US20030068794A1  
GENERAL INFORMATION:  
APPLICANT: Baker, Kevin P.  
APPLICANT: Beresini, Maureen  
APPLICANT: Deforge, Laura  
APPLICANT: Desnoyers, Luc  
APPLICANT: Filvaroli, Ellen  
APPLICANT: Gao, Wei-Qiang  
APPLICANT: Gerritsen, Mary E.  
APPLICANT: Goddard, Audrey  
APPLICANT: Godowski, Paul J.  
APPLICANT: Gurney, Austin L.  
APPLICANT: Sherwood, Steven  
APPLICANT: Smith, Victoria A.  
APPLICANT: Stewart, Timothy A.  
APPLICANT: Tumas, Daniel  
APPLICANT: Watanabe, Collin K  
APPLICANT: Wood, William  
APPLICANT: Zhang, Zemin  
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC  
FILE REFERENCE: P3330R1C30  
CURRENT APPLICATION NUMBER: US/10/123.155  
PRIORITY FILING DATE: 2002-04-15  
Prior Application removed - See Palm or File Wrapper  
SEQ ID NO 131  
LENGTH: 1840  
TYPE: DNA  
ORGANISM: Homo Sapien  
US-10-123-155-131  
Query Match 45.8%; Score 70; DB 9; Length 1840;  
Best Local Similarity 44.0%; Pred. No. 7.1;  
Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCCGSCRSKRC 25  
DB 241 CGGTGTGCGAGACAGCCAGCATGCC 265

```
RESULT 2
US-10-123-155-231
; Publication No. US20030068794A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Beresini, Maureen
; APPLICANT: Deforge, Laura
; APPLICANT: Desnoyers, Luc
; APPLICANT: Filvaroff, Ellen
; APPLICANT: Gao, Wei-Qiang
; APPLICANT: Gerltsen, Mary E.
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Sherwood, Steven
; APPLICANT: Smith, Victoria
; APPLICANT: Stewart, Timothy A.
; APPLICANT: Tumas, Daniel
; APPLICANT: Wood, William
; APPLICANT: Watanabe, Colin K.
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; FILE REFERENCE: P3330R1C30
; CURRENT APPLICATION NUMBER: US/10/123,155
; CURRENT FILING DATE: 2002-04-15
; Prior Application removed - See Palm or File Wrapper
; NUMBER OF SEQ ID NOS: 550
; SEQ ID NO 231
; LENGTH: 1058
; TYPE: DNA
; ORGANISM: Homo Sapien
US-10-123-155-231

Query Match          45.1%; Score 69; DB 9; Length 1058;
Best Local Similarity 48.0%; Pred. No. 5.8;
Matches 12; Conservative 1; Mismatches 12; Indels 0; Gaps 0;

QY      1 CKGTGKPCSR1AYNCCTGSCRSRSGKC 25
DB      238 CTGGGGGACAGACGCCCTGCTGGAC 262

RESULT 3
US-10-184-644-597
; Sequence 597, Application US/10184644
; Publication No. US20030044930A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Chen, Jian
; APPLICANT: Desnoyers, Luc
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Pan, James
; APPLICANT: Smith, Victoria
; APPLICANT: Watanabe, Colin K.
; APPLICANT: Wood, William I.
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; FILE REFERENCE: P3430R1C227
; CURRENT APPLICATION NUMBER: US/10/184,644
; CURRENT FILING DATE: 2002-06-28
; Prior Application removed - See File Wrapper or Palm
; NUMBER OF SEQ ID NOS: 612
; SEQ ID NO 597
; LENGTH: 2380
; TYPE: DNA
; ORGANISM: Homo Sapien
```

```
US-10-184-644-597

Query Match          44.4%; Score 68; DB 9; Length 2380;
Best Local Similarity 48.0%; Pred. No. 14;
Matches 12; Conservative 1; Mismatches 12; Indels 0; Gaps 0;

QY      1 CKGTGKPCSR1AYNCCTGSCRSRSGKC 25
DB      932 CGGTGGCACAACCAACCTGACTGGAC 956

RESULT 4
US-10-184-634-597
; Sequence 597, Application US/10184634
; Publication No. US20030068684A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Chen, Jian
; APPLICANT: Desnoyers, Luc
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Pan, James
; APPLICANT: Smith, Victoria
; APPLICANT: Watanabe, Colin K.
; APPLICANT: Wood, William I.
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; FILE REFERENCE: P3430R1C217
; CURRENT APPLICATION NUMBER: US/10/184,634
; CURRENT FILING DATE: 2002-06-28
; Prior Application removed - See File Wrapper or Palm
; NUMBER OF SEQ ID NOS: 612
; SEQ ID NO 597
; LENGTH: 2380
; TYPE: DNA
; ORGANISM: Homo Sapien
US-10-184-634-597

Query Match          44.4%; Score 68; DB 9; Length 2380;
Best Local Similarity 48.0%; Pred. No. 14;
Matches 12; Conservative 1; Mismatches 12; Indels 0; Gaps 0;

QY      1 CKGTGKPCSR1AYNCCTGSCRSRSGKC 25
DB      932 CGGTGGCACAACCAACCTGACTGGAC 956

RESULT 5
US-10-184-644-211
; Sequence 211, Application US/10184644
; Publication No. US20030044930A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Chen, Jian
; APPLICANT: Desnoyers, Luc
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Pan, James
; APPLICANT: Smith, Victoria
; APPLICANT: Watanabe, Colin K.
; APPLICANT: Wood, William I.
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; FILE REFERENCE: P3430R1C227
; CURRENT APPLICATION NUMBER: US/10/184,644
; CURRENT FILING DATE: 2002-06-28
; Prior Application removed - See File Wrapper or Palm
; NUMBER OF SEQ ID NOS: 612
; SEQ ID NO 211
```

LENGTH: 708  
TYPE: DNA  
ORGANISM: Homo Sapien  
US-10-184-644-211

Query Match 43.8%; Score 67; DB 9; Length 708;  
Best Local Similarity 44.0%; Pred. No. 6.9;  
Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
DB 338 CTGTGACCGCTTCTCTGCGCATGAC 362

RESULT 6  
US-10-184-634-211  
Sequence 211, Application US/10184634  
Publication No. US20030068684A1  
GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.  
APPLICANT: Chen, Jian  
APPLICANT: Desnoyers, Luc  
APPLICANT: Goddard, Audrey  
APPLICANT: Godowski, Paul J.  
APPLICANT: Gurney, Austin L.  
APPLICANT: Pan, James  
APPLICANT: Smith, Victoria  
APPLICANT: Watanabe, Colin K.  
APPLICANT: Wood, William I.  
APPLICANT: Zhang, Zemin  
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC  
FILE REFERENCE: P3430R1C217  
CURRENT APPLICATION NUMBER: US/10/184,634  
CURRENT FILING DATE: 2002-06-28  
Prior Application removed - See File Wrapper or Palm  
NUMBER OF SEQ ID NOS: 612  
SEQ ID NO 211  
LENGTH: 708  
TYPE: DNA  
ORGANISM: Homo Sapien  
US-10-184-634-211

Query Match 43.8%; Score 67; DB 9; Length 708;  
Best Local Similarity 44.0%; Pred. No. 6.9;  
Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
DB 338 CTGTGACCGCTTCTCTGCGCATGAC 362

RESULT 7  
US-10-184-644-33  
Sequence 33, Application US/10184644  
Publication No. US20030044930A1  
GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.  
APPLICANT: Chen, Jian  
APPLICANT: Desnoyers, Luc  
APPLICANT: Goddard, Audrey  
APPLICANT: Godowski, Paul J.  
APPLICANT: Gurney, Austin L.  
APPLICANT: Pan, James  
APPLICANT: Smith, Victoria  
APPLICANT: Watanabe, Colin K.  
APPLICANT: Wood, William I.  
APPLICANT: Zhang, Zemin  
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC  
FILE REFERENCE: P3430R1C227  
CURRENT APPLICATION NUMBER: US/10/184,644  
CURRENT FILING DATE: 2002-06-28

Prior Application removed - See File Wrapper or Palm  
NUMBER OF SEQ ID NOS: 612  
SEQ ID NO 33  
LENGTH: 1413  
TYPE: DNA  
ORGANISM: Homo Sapien  
US-10-184-644-33

Query Match 43.8%; Score 67; DB 9; Length 1413;  
Best Local Similarity 44.0%; Pred. No. 12;  
Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
DB 518 CTATGCCGACGACGACGACGAC 542

RESULT 8  
US-10-184-634-33  
Sequence 33, Application US/10184634  
Publication No. US20030068684A1  
GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.  
APPLICANT: Chen, Jian  
APPLICANT: Desnoyers, Luc  
APPLICANT: Goddard, Audrey  
APPLICANT: Godowski, Paul J.  
APPLICANT: Gurney, Austin L.  
APPLICANT: Pan, James  
APPLICANT: Smith, Victoria  
APPLICANT: Watanabe, Colin K.  
APPLICANT: Wood, William I.  
APPLICANT: Zhang, Zemin  
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC  
FILE REFERENCE: P3430R1C217  
CURRENT APPLICATION NUMBER: US/10/184,634  
CURRENT FILING DATE: 2002-06-28  
Prior Application removed - See File Wrapper or Palm  
NUMBER OF SEQ ID NOS: 612  
SEQ ID NO 33  
LENGTH: 1413  
TYPE: DNA  
ORGANISM: Homo Sapien  
US-10-184-634-33

Query Match 43.8%; Score 67; DB 9; Length 1413;  
Best Local Similarity 44.0%; Pred. No. 12;  
Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
DB 518 CTATGCCGACGACGACGACGAC 542

RESULT 9  
US-10-184-644-7  
Sequence 7, Application US/10184644  
Publication No. US20030044930A1  
GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.  
APPLICANT: Chen, Jian  
APPLICANT: Desnoyers, Luc  
APPLICANT: Goddard, Audrey  
APPLICANT: Godowski, Paul J.  
APPLICANT: Gurney, Austin L.  
APPLICANT: Pan, James  
APPLICANT: Smith, Victoria  
APPLICANT: Watanabe, Colin K.  
APPLICANT: Wood, William I.  
APPLICANT: Zhang, Zemin  
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC  
FILE REFERENCE: P3430R1C227  
CURRENT APPLICATION NUMBER: US/10/184,644  
CURRENT FILING DATE: 2002-06-28

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FILE REFERENCE: P3430RIC227
CURRENT APPLICATION NUMBER: US/10/184,644
CURRENT FILING DATE: 2002-06-28
Prior Application removed - See File Wrapper or Palm
NUMBER OF SEQ ID NOS: 612
SEQ ID NO 7
LENGTH: 2886
TYPE: DNA
ORGANISM: Homo Sapien
US-10-184-644-7

Query Match      43.5%; Score 66.5; DB 9; Length 2886;
Best Local Similarity 37.5%; Pred. No. 24;
Matches 12; Conservative 3; Mismatches 10; Indels 7; Gaps 1;

OY 1 CKGTGKPCSRIVNCCCTGSC-----RSQKC 25
Db 640 CAGTGGCCTTCCTCCTGACTTATTTTGTGTC 671

RESULT 10
US-10-184-634-7
Sequence 7, Application US/10184634
Publication No. US2003008684A1
GENERAL INFORMATION:
APPLICANT: Baker, Kevin P.
APPLICANT: Chen, Jian
APPLICANT: Desnoyers, Luc
APPLICANT: Goddard, Audrey
APPLICANT: Godowski, Paul J.
APPLICANT: Gurney, Austin L.
APPLICANT: Pan, James
APPLICANT: Smith, Victoria
APPLICANT: Watanabe, Colin K.
APPLICANT: Wood, William I.
APPLICANT: Zhang, Zemin
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
FILE REFERENCE: P3430RIC217
CURRENT APPLICATION NUMBER: US/10/184,634
CURRENT FILING DATE: 2002-06-28
Prior Application removed - See File Wrapper or Palm
NUMBER OF SEQ ID NOS: 612
SEQ ID NO 7
LENGTH: 2886
TYPE: DNA
ORGANISM: Homo Sapien
US-10-184-634-7

Query Match      43.5%; Score 66.5; DB 9; Length 2886;
Best Local Similarity 37.5%; Pred. No. 24;
Matches 12; Conservative 3; Mismatches 10; Indels 7; Gaps 1;

OY 1 CKGTGKPCSRIVNCCCTGSC-----RSQKC 25
Db 640 CAGTGGCCTTCCTCCTGACTTATTTTGTGTC 671

RESULT 11
US-10-123-155-157
Sequence 157, Application US/10123155
Publication No. US20030086794A1
GENERAL INFORMATION:
APPLICANT: Baker, Kevin P.
APPLICANT: Beresini, Maureen
APPLICANT: Deforge, Laura
APPLICANT: Desnoyers, Luc
APPLICANT: Filvaroff, Ellen
APPLICANT: Gao, Wei-Qiang
APPLICANT: Gerritsen, Mary E.
APPLICANT: Goddard, Audrey
APPLICANT: Godowski, Paul J.
APPLICANT: Gurney, Austin L.
```

```
APPLICANT: Sherwood, Steven
APPLICANT: Smith, Victoria
APPLICANT: Stewart, Timothy A.
APPLICANT: Tumas, Daniel
APPLICANT: Watanabe, Colin K.
APPLICANT: Wood, William
APPLICANT: Zhang, Zemin
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
FILE REFERENCE: P3330RIC30
CURRENT APPLICATION NUMBER: US/10/123,155
CURRENT FILING DATE: 2002-04-15
Prior Application removed - See Palm or File Wrapper
NUMBER OF SEQ ID NOS: 550
SEQ ID NO 157
LENGTH: 1328
TYPE: DNA
ORGANISM: Homo Sapien
US-10-123-155-157
```

```
Query Match      43.1%; Score 66; DB 9; Length 1328;
Best Local Similarity 52.0%; Pred. No. 15;
Matches 13; Conservative 0; Mismatches 10; Indels 2; Gaps 1;

OY 1 CKGTGKPCSRIVNCCCTGSCRSQKC 25
Db 520 CTGTGAGCCCAACCTGGC--GAC 542
```

```
RESULT 12
US-10-123-155-9
Sequence 9, Application US/10123155
Publication No. US20030086794A1
GENERAL INFORMATION:
APPLICANT: Baker, Kevin P.
APPLICANT: Beresini, Maureen
APPLICANT: Deforge, Laura
APPLICANT: Desnoyers, Luc
APPLICANT: Filvaroff, Ellen
APPLICANT: Gao, Wei-Qiang
APPLICANT: Gerritsen, Mary E.
APPLICANT: Goddard, Audrey
APPLICANT: Godowski, Paul J.
APPLICANT: Gurney, Austin L.
APPLICANT: Sherwood, Steven
APPLICANT: Smith, Victoria
APPLICANT: Stewart, Timothy A.
APPLICANT: Tumas, Daniel
APPLICANT: Watanabe, Colin K.
APPLICANT: Wood, William
APPLICANT: Zhang, Zemin
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
FILE REFERENCE: P3330RIC30
CURRENT APPLICATION NUMBER: US/10/123,155
CURRENT FILING DATE: 2002-04-15
Prior Application removed - See Palm or File Wrapper
NUMBER OF SEQ ID NOS: 550
SEQ ID NO 9
LENGTH: 2276
TYPE: DNA
ORGANISM: Homo Sapien
US-10-123-155-9
```

```
Query Match      43.1%; Score 66; DB 9; Length 2276;
Best Local Similarity 44.0%; Pred. No. 22;
Matches 11; Conservative 2; Mismatches 12; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIVNCCCTGSCRSQKC 25
Db 816 CAGAGGCCATCAGCATCCAGGC 840
```

RESULT 13  
US-10-184-644-225  
; Sequence 225, Application US/10184644  
; Publication No. US20030044930A1  
; GENERAL INFORMATION:  
; APPLICANT: Baker, Kevin P.  
; APPLICANT: Chen, Jian  
; APPLICANT: Desnoyers, Luc  
; APPLICANT: Goddard, Audrey  
; APPLICANT: Godowski, Paul J.  
; APPLICANT: Gurney, Austin L.  
; APPLICANT: Pan, James  
; APPLICANT: Smith, Victoria  
; APPLICANT: Watanabe, Colin K.  
; APPLICANT: Wood, William I.  
; APPLICANT: Zhang, Zemin  
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC  
; FILE REFERENCE: P3430R1C227  
; CURRENT APPLICATION NUMBER: US/10/184,644  
; CURRENT FILING DATE: 2002-06-28  
; Prior Application removed - See File Wrapper or Palm  
; NUMBER OF SEQ ID NOS: 612  
; SEQ ID NO 225  
; LENGTH: 2692  
; TYPE: DNA  
; ORGANISM: Homo Sapien  
US-10-184-644-225

Query Match 43.1%; Score 66; DB 9; Length 2692;  
Best Local Similarity 47.8%; Pred. No. 26;  
Matches 11; Conservative 2; Mismatches 10; Indels 0; Gaps 0;  
QY 1 CKGTGKPCSRIVNCTGSCRSRG 23  
| | | | | : | | | | | : |  
DB 2024 CTGTGTGTCATGTTCCTGTCTGG 2046  
US-10-184-634-225  
RESULT 14  
US-10-184-634-225  
; Sequence 225, Application US/10184634  
; Publication No. US20030068684A1  
; GENERAL INFORMATION:  
; APPLICANT: Baker, Kevin P.  
; APPLICANT: Chen, Jian  
; APPLICANT: Desnoyers, Luc  
; APPLICANT: Goddard, Audrey  
; APPLICANT: Godowski, Paul J.  
; APPLICANT: Gurney, Austin L.  
; APPLICANT: Pan, James  
; APPLICANT: Smith, Victoria  
; APPLICANT: Watanabe, Colin K.  
; APPLICANT: Wood, William I.  
; APPLICANT: Zhang, Zemin  
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC  
; FILE REFERENCE: P3430R1C217  
; CURRENT APPLICATION NUMBER: US/10/184,634  
; CURRENT FILING DATE: 2002-06-28  
; Prior Application removed - See File Wrapper or Palm  
; NUMBER OF SEQ ID NOS: 612  
; SEQ ID NO 225  
; LENGTH: 2692  
; TYPE: DNA  
; ORGANISM: Homo Sapien  
US-10-184-634-225

Query Match 43.1%; Score 66; DB 9; Length 2692;  
Best Local Similarity 47.8%; Pred. No. 26;  
Matches 11; Conservative 2; Mismatches 10; Indels 0; Gaps 0;  
QY 1 CKGTGKPCSRIVNCTGSCRSRG 23  
| | | | | : | | | | | : |

DB 2024 CTGTGTGTCATGTTCCTGTCTGG 2046  
US-10-123-155-211  
RESULT 15  
US-10-123-155-211  
; Sequence 211, Application US/10123155  
; Publication No. US20030068794A1  
; GENERAL INFORMATION:  
; APPLICANT: Baker, Kevin P.  
; APPLICANT: Beresini, Maureen  
; APPLICANT: Deforge, Laura  
; APPLICANT: Desnoyers, Luc  
; APPLICANT: Filvaroff, Ellen  
; APPLICANT: Gao, Wei-Qiang  
; APPLICANT: Gerritsen, Mary E.  
; APPLICANT: Goddard, Audrey  
; APPLICANT: Godowski, Paul J.  
; APPLICANT: Gurney, Austin L.  
; APPLICANT: Sherwood, Steven  
; APPLICANT: Smith, Victoria  
; APPLICANT: Stewart, Timothy A.  
; APPLICANT: Tumas, Daniel  
; APPLICANT: Watanabe, Colin K.  
; APPLICANT: Wood, William I.  
; APPLICANT: Zhang, Zemin  
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC  
; FILE REFERENCE: P3330R1C30  
; CURRENT APPLICATION NUMBER: US/10/123,155  
; CURRENT FILING DATE: 2002-04-15  
; Prior Application removed - See Palm or File Wrapper  
; NUMBER OF SEQ ID NOS: 550  
; SEQ ID NO 211  
; LENGTH: 3266  
; TYPE: DNA  
; ORGANISM: Homo Sapien  
US-10-123-155-211

Query Match 43.1%; Score 66; DB 9; Length 3266;  
Best Local Similarity 48.0%; Pred. No. 30;  
Matches 12; Conservative 2; Mismatches 11; Indels 0; Gaps 0;  
QY 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
| | | | | : | | | | | : |  
DB 2771 CCGGGCCCTCTATGCTGCGCAGCC 2795  
Search completed: July 1, 2003, 11:01:52  
Job time : 9.85417 secs

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## OM protein - protein search, using sw model

Run on: July 1, 2003, 10:49:37 ; Search time 6.25 Seconds

(without alignments)  
117.692 Million cell updates/sec

Title: US-09-910-082a-375

Perfect score: 153

Sequence: 1 CKGTGKPCSRATVNCCTGSCSGKRC 25

Scoring table:

BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

## Database :

Issued\_Patents\_AA.\*  
1: /cgn2\_6/ptodata/1/1aa/5A.COMB.pep:\*  
2: /cgn2\_6/ptodata/1/1aa/5B.COMB.pep:\*  
3: /cgn2\_6/ptodata/1/1aa/6A.COMB.pep:\*  
4: /cgn2\_6/ptodata/1/1aa/6B.COMB.pep:\*  
5: /cgn2\_6/ptodata/1/1aa/PCITUS.COMB.pep:\*  
6: /cgn2\_6/ptodata/1/1aa/Backfiles1.pep:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	126	82.4	25	1	US-08-496-847-35
2	126	82.4	25	2	US-08-965-918-35
3	126	82.4	25	3	US-08-613-400A-35
4	123	80.4	25	1	US-08-049-794-12
5	123	80.4	25	1	US-08-496-847-12
6	123	80.4	25	2	US-08-742-774-12
7	123	80.4	25	2	US-08-675-354-12
8	123	80.4	25	2	US-08-965-918-12
9	123	80.4	25	2	US-09-138-439-12
10	123	80.4	25	3	US-08-613-400A-12
11	123	80.4	25	3	US-09-298-017-12
12	123	80.4	25	4	US-09-392-979A-12
13	122	79.7	25	1	US-07-789-913-9
14	122	79.7	25	1	US-07-789-913-12
15	122	79.7	25	1	US-08-049-794-9
16	122	79.7	25	1	US-08-049-794-17
17	122	79.7	25	1	US-08-496-847-9
18	122	79.7	25	1	US-08-496-847-17
19	122	79.7	25	1	US-08-496-847-36
20	122	79.7	25	2	US-08-742-774-9
21	122	79.7	25	2	US-08-742-774-17
22	122	79.7	25	2	US-08-675-354-9
23	122	79.7	25	2	US-08-675-354-17
24	122	79.7	25	2	US-08-965-918-9
25	122	79.7	25	2	US-08-965-918-17
26	122	79.7	25	2	US-08-965-918-36
27	122	79.7	25	2	US-09-138-439-9

28	122	79.7	25	2	US-09-138-439-17	Sequence 17, Appl
29	122	79.7	25	3	US-08-613-400A-9	Sequence 9, Appl
30	122	79.7	25	3	US-08-613-400A-17	Sequence 17, Appl
31	122	79.7	25	3	US-08-613-400A-36	Sequence 36, Appl
32	122	79.7	25	3	US-09-298-017-9	Sequence 9, Appl
33	122	79.7	25	3	US-09-298-017-17	Sequence 17, Appl
34	122	79.7	25	4	US-09-392-979A-9	Sequence 9, Appl
35	122	79.7	25	4	US-09-392-979A-17	Sequence 17, Appl
36	122	79.7	26	1	US-08-049-794-11	Sequence 11, Appl
37	122	79.7	26	1	US-08-496-847-11	Sequence 11, Appl
38	122	79.7	26	2	US-08-742-774-11	Sequence 11, Appl
39	122	79.7	26	2	US-08-675-354-11	Sequence 11, Appl
40	122	79.7	26	2	US-08-965-918-11	Sequence 11, Appl
41	122	79.7	26	2	US-09-138-439-11	Sequence 11, Appl
42	122	79.7	26	3	US-08-613-400A-11	Sequence 11, Appl
43	122	79.7	26	3	US-09-298-017-11	Sequence 11, Appl
44	122	79.7	26	4	US-09-392-979A-11	Sequence 11, Appl
45	121	79.1	25	1	US-07-789-913-11	Sequence 1, Appl

## ALIGNMENTS

RESULT 1  
US-08-496-847-35  
Sequence 35, Application US/08496847  
Patent No. 5795864  
GENERAL INFORMATION:  
APPLICANT: Amstutz, Gary A.  
APPLICANT: Bowersox, Stephen S.  
APPLICANT: Gohil, Kashorandra  
APPLICANT: Adriaenssens, Peter I.  
APPLICANT: Kristipati, Ramasharma  
TITLE OF INVENTION: METHODS AND  
TITLE OF INVENTION: FORMULATIONS FOR PREVENTING PROGRESSION OF NEUROPATHIC PAIN  
NUMBER OF SEQUENCES: 36  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Dehlinger & Associates  
ADDRESS: 350 Cambridge Avenue, Suite 250  
CITY: Palo Alto  
STATE: CA  
COUNTRY: US  
ZIP: 94306-1546  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette  
COMPUTER: IBM Compatible  
OPERATING SYSTEM: DOS  
SOFTWARE: FASTSEQ for Windows Version 2.0  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/496,847  
FILING DATE: 27-JUN-1995  
CLASSIFICATION: 514  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0009.31  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 650-324-0880  
TELEFAX: 650-324-0960  
INFORMATION FOR SEQ ID NO: 35:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: peptide  
HYPOTHETICAL: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-273, FIGURE 2  
US-08-496-847-35  
Query Match 82.4%; Score 126; DB 1; Length 25;  
Best Local Similarity 80.0%; Pred. No. 3e-07;  
Matches 20; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25  
|||||  
Db 1 CKGTGKPCSR1AYNCTGSCRSKGC 25

RESULT 2  
US-08-965-918-35  
; Sequence 35, Application US/08965918  
; Patent No. 5891849  
; GENERAL INFORMATION:  
; APPLICANT: Amstutz, Gary A.  
; APPLICANT: Bowersox, Stephen S.  
; APPLICANT: Gohll, Kishorchandra  
; APPLICANT: Adriaenssens, Peter I.  
; APPLICANT: Kristipati, Ramasharma  
; TITLE OF INVENTION: METHODS AND FORMULATIONS FOR PREVENTING  
; TITLE OF INVENTION: PROGRESSION OF NEUROPATHIC PAIN  
; NUMBER OF SEQUENCES: 36  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Dehlinger & Associates  
; STREET: 350 Cambridge Avenue, Suite 250  
; CITY: Palo Alto  
; STATE: CA  
; COUNTRY: US  
; ZIP: 94306-1546  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Diskette  
; OPERATING SYSTEM: DOS  
; SOFTWARE: FastSeq for Windows Version 2.0  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/965,918  
; FILING DATE: 07-NOV-1997  
; CLASSIFICATION: 514  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Mohr, Judy M.  
; REGISTRATION NUMBER: 38,563  
; REFERENCE/DOCKET NUMBER: 5865-0009.34  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 650-324-0880  
; TELEFAX: 650-324-0960  
; INFORMATION FOR SEQ ID NO: 35:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 25 amino acids  
; TYPE: amino acid  
; TOPOLOGY: linear  
; MOLECULE TYPE: peptide  
; HYPOTHEICAL: NO  
; ORIGINAL SOURCE:  
; INDIVIDUAL ISOLATE: SNX-273, FIGURE 2  
US-08-965-918-35  
Query Match 82.4%; Score 126; DB 2; Length 25;  
Best Local Similarity 80.0%; Pred. No. 3e-07;  
Matches 20; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25  
|||||  
Db 1 CKGTGKPCSR1AYNCTGSCRSKGC 25

RESULT 3  
US-08-613-400A-35  
; Sequence 35, Application US/08613400A  
; Patent No. 6054429  
; GENERAL INFORMATION:  
; APPLICANT: Bowersox, S. Scott  
; APPLICANT: Gadbois, Theresa  
; APPLICANT: Pettus, Mark, R.  
; APPLICANT: Luther, Robert, R.  
; TITLE OF INVENTION: IMPROVED EPIDURAL  
; TITLE OF INVENTION: METHOD OF PRODUCING ANALGESIA

NUMBER OF SEQUENCES: 36  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Dehlinger & Associates  
STREET: 350 Cambridge Avenue, Suite 250  
CITY: Palo Alto  
STATE: CA  
COUNTRY: US  
ZIP: 94306-1546  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette  
COMPUTER: IBM Compatible  
OPERATING SYSTEM: DOS  
SOFTWARE: FastSeq for Windows Version 2.0  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/613,400A  
FILING DATE: 08-MAR-1996  
CLASSIFICATION: 514  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER:  
FILING DATE:  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0019  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 650-324-0880  
TELEFAX: 650-324-0960  
INFORMATION FOR SEQ ID NO: 35:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHEICAL: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: MT1A/SNX-111, FIGURE 2  
US-08-613-400A-35

Query Match 82.4%; Score 126; DB 3; Length 25;  
Best Local Similarity 80.0%; Pred. No. 3e-07;  
Matches 20; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25  
|||||  
Db 1 CKGTGKPCSR1AYNCTGSCRSKGC 25

RESULT 4  
US-08-049-794-12  
; Sequence 12, Application US/08049794  
; Patent No. 5587454  
; GENERAL INFORMATION:  
; APPLICANT: JUSTICE, ALAN  
; APPLICANT: SINGH, TEJINDER  
; APPLICANT: GOHLL, KISHOR C  
; APPLICANT: VALENTINO, KAREN L  
; APPLICANT: MILJANICH, GEORGE P  
; TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
; TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA  
; NUMBER OF SEQUENCES: 34  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Law Offices of Peter Dehlinger  
; STREET: 350 Cambridge Avenue, Suite 300  
; CITY: Palo Alto  
; STATE: CA  
; COUNTRY: USA  
; ZIP: 94306  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/049,794  
FILING DATE: 19930415  
CLASSIFICATION: 514  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 07/814,759  
FILING DATE: 30-DEC-1991  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0009.30  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (415) 324-0880  
TELEFAX: (415) 324-0960  
INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
FEATURE:  
NAME/KEY: Modified-site  
LOCATION: 12  
OTHER INFORMATION: /note= "where X is Nle"  
US-08-049-794-12

Query Match 80.4%; Score 123; DB 1; Length 25;  
Best Local Similarity 76.0%; Pred. No. 6e-07;  
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
DB 1 CKGAGAKCSRLXYDCCTGSCRSKGC 25

RESULT 5  
US-08-496-847-12  
Sequence 12, Application US/08496847  
Patent No. 5795864  
GENERAL INFORMATION:  
APPLICANT: Amstutz, Gary A.  
APPLICANT: Bowersox, Stephen S.  
APPLICANT: Gohl, Kishorchandra  
APPLICANT: Adrianssens, Peter I.  
APPLICANT: Kristipati, Ramasharma  
TITLE OF INVENTION: METHODS AND  
FORMULATIONS FOR PREVENTING PROGRESSION OF NEUROPATHIC PAIN  
NUMBER OF SEQUENCES: 36  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Dehlinger & Associates  
STREET: 350 Cambridge Avenue, Suite 250  
CITY: Palo Alto  
STATE: CA  
COUNTRY: US  
ZIP: 94306-1546  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette  
COMPUTER: IBM Compatible  
OPERATING SYSTEM: DOS  
SOFTWARE: FastSeq for Windows Version 2.0  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/496,847  
FILING DATE: 27-JUN-1995  
CLASSIFICATION: 514  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0009.31  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 650-324-0880  
TELEFAX: 650-324-0960

INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
FEATURE:  
NAME/KEY: Modified-site  
LOCATION: 12  
OTHER INFORMATION: /note= "where X is Nle"  
US-08-496-847-12

Query Match 80.4%; Score 123; DB 1; Length 25;  
Best Local Similarity 76.0%; Pred. No. 6e-07;  
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
DB 1 CKGAGAKCSRLXYDCCTGSCRSKGC 25

RESULT 6  
US-08-742-774-12  
Sequence 12, Application US/08742774  
Patent No. 5824645  
GENERAL INFORMATION:  
APPLICANT: JUSTICE, ALAN  
APPLICANT: SINGH, TEJINDER  
APPLICANT: GOHIL, KISHOR C  
APPLICANT: VALENTINO, KAREN L  
APPLICANT: MILJANTICH, GEORGE P  
TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
ENHANCING OPIATE ANALGESIA  
NUMBER OF SEQUENCES: 34  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Law Offices of Peter Dehlinger  
STREET: 350 Cambridge Avenue, Suite 300  
CITY: Palo Alto  
STATE: CA  
COUNTRY: USA  
ZIP: 94306  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC Compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/742,774  
FILING DATE:  
CLASSIFICATION:  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/675,354  
FILING DATE: 03-JUL-1996  
APPLICATION NUMBER: US/08/049,794  
FILING DATE: 1993-APR-15  
APPLICATION NUMBER: US 07/814,759  
FILING DATE: 30-DEC-1991  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0009.30  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (415) 324-0880  
TELEFAX: (415) 324-0960  
INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: protein



Patent No. 5994305  
GENERAL INFORMATION:  
APPLICANT: JUSTICE, ALAN  
APPLICANT: SINGH, TEJINDER  
APPLICANT: GOHLI, KISHOR C  
APPLICANT: VALENTINO, KAREN L  
APPLICANT: MILJANICH, GEORGE P  
TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
NUMBER OF SEQUENCES: 34  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Law Offices of Peter Dehlinger  
STREET: 350 Cambridge Avenue, Suite 300  
CITY: Palo Alto  
STATE: CA  
COUNTRY: USA  
ZIP: 94306  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patentln Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/09/138,439  
FILING DATE:  
CLASSIFICATION:  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US/08/049,794  
FILING DATE: 1993-04-15  
APPLICATION NUMBER: US 07/814,759  
FILING DATE: 30-DEC-1991  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0009.30  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (415) 324-0880  
TELEFAX: (415) 324-0960  
INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
FEATURE:  
NAME/KEY: Modified-site  
LOCATION: 12  
OTHER INFORMATION: /note= "where X is Nle"  
US-09-138-439-12  
Query Match 80.4%; Score 123; DB 2; Length 25;  
Best Local Similarity 76.0%; Pred. No. 6e-07;  
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
DB 1 CKGAGACSRILXYPDCTGSCRSKGC 25  
RESULT 10  
US-08-613-400A-12  
Sequence 12, Application US/08613400A  
Patent No. 6054429  
GENERAL INFORMATION:  
APPLICANT: Bowersox, S. Scott  
APPLICANT: Gadbois, Theresa  
APPLICANT: Pettus, Mark, R.  
APPLICANT: Luther, Robert, R.  
TITLE OF INVENTION: IMPROVED EPIDURAL  
METHOD OF PRODUCING ANALGESIA

NUMBER OF SEQUENCES: 36  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Dehlinger & Associates  
STREET: 350 Cambridge Avenue, Suite 250  
CITY: Palo Alto  
STATE: CA  
COUNTRY: US  
ZIP: 94306-1546  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette  
COMPUTER: IBM Compatible  
OPERATING SYSTEM: DOS  
SOFTWARE: FastSeq for Windows Version 2.0  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/613,400A  
FILING DATE: 08-MAR-1996  
CLASSIFICATION: 514  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER:  
FILING DATE:  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0019  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 650-324-0880  
TELEFAX: 650-324-0960  
INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
FEATURE:  
NAME/KEY: Modified-site  
LOCATION: 12  
OTHER INFORMATION: /note= "where X is Nle"  
US-08-613-400A-12  
Query Match 80.4%; Score 123; DB 3; Length 25;  
Best Local Similarity 76.0%; Pred. No. 6e-07;  
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
DB 1 CKGAGACSRILXYPDCTGSCRSKGC 25  
RESULT 11  
US-09-298-017-12  
Sequence 12, Application US/09298017  
Patent No. 6087091  
GENERAL INFORMATION:  
APPLICANT: JUSTICE, ALAN  
APPLICANT: SINGH, TEJINDER  
APPLICANT: GOHLI, KISHOR C  
APPLICANT: VALENTINO, KAREN L  
APPLICANT: MILJANICH, GEORGE P  
TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
NUMBER OF SEQUENCES: 34  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Law Offices of Peter Dehlinger  
STREET: 350 Cambridge Avenue, Suite 300  
CITY: Palo Alto  
STATE: CA  
COUNTRY: USA  
ZIP: 94306  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patentin Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/09/298,017  
FILING DATE:  
CLASSIFICATION:  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/049,794  
FILING DATE:  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0009.30  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (415) 324-0880  
TELEFAX: (415) 324-0960  
INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
FEATURE:  
NAME/KEY: Modified-site  
LOCATION: 12  
OTHER INFORMATION: /note="where X is Nle"  
US-09-298-017-12

Query Match 80.4%; Score 123; DB 3; Length 25;  
Best Local Similarity 76.0%; Pred. No. 6e-07;  
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIVAYNCTGSCRSKGC 25  
DB 1 CKGAGKCSRLXYDCCTGSCRSKGC 25

RESULT 12  
US-09-392-979A-12  
Sequence 12, Application US/09392979A  
Patent No. 6136786  
GENERAL INFORMATION:  
APPLICANT: JUSTICE, ALAN  
APPLICANT: SINGH, TEJINDER C  
APPLICANT: GOHIL, KISHOR C  
APPLICANT: VALENTINO, KAREN L  
APPLICANT: MILJANICH, GEORGE P  
TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA  
NUMBER OF SEQUENCES: 34  
CORRESPONDENCE ADDRESSES:  
ADDRESSEE: Law Offices of Peter Dehlinger  
STREET: 350 Cambridge Avenue, Suite 300  
CITY: Palo Alto  
STATE: CA  
COUNTRY: USA  
ZIP: 94306  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patentin Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/09/392,979A  
FILING DATE:  
CLASSIFICATION:  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US/08/049,794  
FILING DATE: 1993-04-15

APPLICATION NUMBER: US 07/814,759  
FILING DATE: 30-DEC-1991  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0009.30  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (415) 324-0880  
TELEFAX: (415) 324-0960  
INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
FEATURE:  
NAME/KEY: Modified-site  
LOCATION: 12  
OTHER INFORMATION: /note="where X is Nle"  
US-09-392-979A-12

Query Match 80.4%; Score 123; DB 4; Length 25;  
Best Local Similarity 76.0%; Pred. No. 6e-07;  
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OY 1 CKGTGKPCSRIVAYNCTGSCRSKGC 25  
DB 1 CKGAGKCSRLXYDCCTGSCRSKGC 25

RESULT 13  
US-07-789-913-9  
Sequence 9, Application US/07789913  
Patent No. 5559095  
GENERAL INFORMATION:  
APPLICANT: Miljanich, George P.  
APPLICANT: Bowersox, Stephen S.  
APPLICANT: Fox, James A.  
APPLICANT: Valentino, Karen L.  
APPLICANT: Bitner, Robert S.  
APPLICANT: Yamashiro, Donald H.  
TITLE OF INVENTION: Delayed Treatment Method of Reducing  
TITLE OF INVENTION: Ischemia-related Neuronal Damage  
NUMBER OF SEQUENCES: 28  
CORRESPONDENCE ADDRESSES:  
ADDRESSEE: Law Offices of Peter Dehlinger  
STREET: 350 Cambridge Avenue, Suite 300  
CITY: Palo Alto  
STATE: CA  
COUNTRY: USA  
ZIP: 94306  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patentin Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/789,913  
FILING DATE: 19911112  
CLASSIFICATION: 514  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 07/561,766  
FILING DATE: 02-AUG-1990  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 07/440,094  
FILING DATE: 22-NOV-1989  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0005.30

TELECOMMUNICATION INFORMATION:  
TELEPHONE: (415) 324-0880  
TELEFAX: (415) 324-0960  
INFORMATION FOR SEQ ID NO: 9:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: both  
MOLECULE TYPE: peptide  
HYPOTHETICAL: NO  
ANTI-SENSE: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-190  
US-07-789-913-9

Query Match  
Best Local Similarity 79.7%; Score 122; DB 1; Length 25;  
Best Local Similarity 76.0%; Pred. No. 7.7e-07;  
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

OY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25  
Db 1 CKGAGAKCSRLMTDCTGSCRSKGC 25

RESULT 14  
US-07-789-913-12  
Sequence 12, Application US/07789913  
Patent No. 5559095  
GENERAL INFORMATION:  
APPLICANT: Miljanich, George P.  
APPLICANT: Bowersox, Stephen S.  
APPLICANT: Fox, James A.  
APPLICANT: Valentino, Karen L.  
APPLICANT: Blumer, Robert S.  
APPLICANT: Yamashiro, Donald H.  
TITLE OF INVENTION: Delayed Treatment Method of Reducing  
TITLE OF INVENTION: Ischemia-Related Neuronal Damage  
NUMBER OF SEQUENCES: 28  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Law Offices of Peter Dehlinger  
STREET: 350 Cambridge Avenue, Suite 300  
CITY: Palo Alto  
STATE: CA  
COUNTRY: USA  
ZIP: 94306  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patent Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/789,913  
FILING DATE: 19911112  
CLASSIFICATION: 514  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 07/561,766  
FILING DATE: 02-AUG-1990  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 07/440,094  
FILING DATE: 22-NOV-1989  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0005.30  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (415) 324-0880  
TELEFAX: (415) 324-0960  
INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: both  
MOLECULE TYPE: peptide

HYPOTHETICAL: NO  
ANTI-SENSE: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-194  
FEATURE:  
NAME/KEY: Modified-site  
LOCATION: 12..13  
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US-07-789-913-12

Query Match  
Best Local Similarity 79.7%; Score 122; DB 1; Length 25;  
Best Local Similarity 76.0%; Pred. No. 7.7e-07;  
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

OY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25  
Db 1 CKGAGAKCSRLMTDCTGSCRSKGC 25

RESULT 15  
US-08-049-794-9  
Sequence 9, Application US/08049794  
Patent No. 5587454  
GENERAL INFORMATION:  
APPLICANT: JUSTICE, ALAN  
APPLICANT: SINGH, TELINDER  
APPLICANT: GOHIL, KISHOR C  
APPLICANT: VALENTINO, KAREN L  
APPLICANT: MILJANICH, GEORGE P  
TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA  
NUMBER OF SEQUENCES: 34  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Law Offices of Peter Dehlinger  
STREET: 350 Cambridge Avenue, Suite 300  
CITY: Palo Alto  
STATE: CA  
COUNTRY: USA  
ZIP: 94306  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patent Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/049,794  
FILING DATE: 19930415  
CLASSIFICATION: 514  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 07/814,759  
FILING DATE: 30-DEC-1991  
ATTORNEY/AGENT INFORMATION:  
NAME: Stratford, Carol A.  
REGISTRATION NUMBER: 34,444  
REFERENCE/DOCKET NUMBER: 5865-0009.30  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (415) 324-0880  
TELEFAX: (415) 324-0960  
INFORMATION FOR SEQ ID NO: 9:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 25 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
ORIGINAL SOURCE:  
INDIVIDUAL ISOLATE: SNX-190, FIGURE 2  
US-08-049-794-9

Query Match  
Best Local Similarity 79.7%; Score 122; DB 1; Length 25;  
Best Local Similarity 76.0%; Pred. No. 7.7e-07;  
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

Tue Jul 1 11:02:04 2003

us-09-910-082a-375.rai

Page 8

QY 1 CKGTGKPCSRIVNCCGTGSCRSRKC 25  
||| | ||| : ||| ||| ||| |||  
Db 1 CKGAGAKCSRLMYDCCTGSCRSRKC 25

Search completed: July 1, 2003, 10:53:55  
Job time : 7.25 secs





XX OLIVERA BM, MCINTOSH JM, WATKINS M, GARRETT JE, SHON K;  
PI JACOBSEN R, JONES RM, CARTIER GE;  
XX  
DR WPI: 2002-257318/30.  
XX  
PT New omega-conopeptides useful for treating disorders associated with  
PT voltage gated ion channels e.g. pain, inflammation, neurological or  
PT cardiovascular disorders -  
XX  
PS Claim 1(a): Page 71; 195pp; English.  
XX  
XX The invention relates to isolated omega-conopeptides, nucleic acid  
CC sequences encoding them, and propeptide sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
CC cardiovascular, antiinflammatory, antidiabetic,  
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological injury  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders. They may also be used  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.  
XX  
SQ Sequence 25 AA:  
XX  
Query Match 100.0%; Score 153; DB 23; Length 25;  
Best Local Similarity 100.0%; Pred. No. 1.6e-10;  
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
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DB 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
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ABB96867  
ID ABB96867 standard; Peptide: 25 AA.  
XX  
AC ABB96867;  
XX  
DT 12-JUL-2002 (first entry)  
XX  
DE Omega-conopeptide M6.1 toxin sequence.  
XX  
XX Omega-conopeptide: analgesic; anticonvulsant; vasotropic; cardiant;  
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KW antidiabetic; tranquiliser; vulnerary; antipsychotic;  
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KW psychosis; anxiety; schizophrenia.  
XX  
OS Conus magus.  
XX  
PN W0200207675-A2.  
XX  
PD 31-JAN-2002.  
XX  
PE 23-JUL-2001; 2001WO-US23041.  
XX  
PF 21-JUL-2000; 2000US-219616P.  
PR 05-FEB-2001; 2001US-265888P.  
XX

PA (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNETIX INC.  
XX  
XX OLIVERA BM, MCINTOSH JM, WATKINS M, GARRETT JE, SHON K;  
PI JACOBSEN R, JONES RM, CARTIER GE;  
XX  
DR WPI: 2002-257318/30.  
XX  
PT New omega-conopeptides useful for treating disorders associated with  
PT voltage gated ion channels e.g. pain, inflammation, neurological or  
PT cardiovascular disorders -  
XX  
PS Claim 1(a): Page 72; 195pp; English.  
XX  
XX The invention relates to isolated omega-conopeptides, nucleic acid  
CC sequences encoding them, and propeptide sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
CC cardiovascular, antiinflammatory, antidiabetic,  
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders. They may also be used  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.  
XX  
SQ Sequence 25 AA:  
XX  
Query Match 100.0%; Score 153; DB 23; Length 25;  
Best Local Similarity 100.0%; Pred. No. 1.6e-10;  
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
DB 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
RESULT 3  
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ID ABB96629 standard; Peptide: 71 AA.  
XX  
AC ABB96629;  
XX  
DT 12-JUL-2002 (first entry)  
XX  
DE Omega-conopeptide Cn6.2 propeptide.  
XX  
XX Omega-conopeptide: analgesic; anticonvulsant; vasotropic; cardiant;  
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KW antidiabetic; tranquiliser; vulnerary; antipsychotic;  
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KW psychosis; anxiety; schizophrenia.  
XX  
OS Conus consors.  
XX  
PN W0200207675-A2.  
XX  
PD 31-JAN-2002.  
XX  
PE 23-JUL-2001; 2001WO-US23041.  
XX  
PF 21-JUL-2000; 2000US-219616P.  
XX

PR 05-FEB-2001; 2001US-265888P.  
XX  
XX (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNETIX INC.  
XX  
XX  
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
PI Jacobsen R, Jones RM, Cartier GE;  
XX  
XX MPI: 2002-257318/30.  
DR N-PSDB: ABL98888.  
XX  
XX New omega-conopeptides useful for treating disorders associated with  
PT voltage gated ion channels e.g. pain, inflammation, neurological or  
PT cardiovascular disorders -  
XX  
XX  
PS Claim 1(c); Page 38; 195pp; English.  
XX  
XX The invention relates to isolated omega-conopeptides, nucleic acid  
CC sequences encoding them, and propeptide sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
CC tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders. They may also be used  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
CC sequences.  
XX  
XX  
SQ Sequence 71 AA:  
Query Match 100.0%; Score 153; DB 23; Length 71;  
Best Local Similarity 100.0%; Pred. No. 3.7e-10;  
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 CKGTGKPCSRIRAYNCTGSCRSRGC 25  
DB 46 CKGTGKPCSRIRAYNCTGSCRSRGC 70  
RESULT 4  
ABB96657  
ID ABB96657 standard; Peptide: 71 AA.  
XX  
XX ABB96657:  
AC  
XX  
XX 12-JUL-2002 (first entry)  
DT  
XX  
XX Omega-conopeptide M6.1 propeptide.  
DE  
XX  
XX Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KW antimigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;  
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KW psychosis; anxiety; schizophrenia.  
XX  
XX  
XX Conus magus.  
OS  
XX  
XX WO000207675-A2.  
PN  
XX  
PD 31-JAN-2002.

XX  
PF 23-JUL-2001; 2001WO-US23041.  
XX  
XX 21-JUL-2000; 2000US-219616P.  
PR 05-FEB-2001; 2001US-265888P.  
XX  
XX  
PA (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNETIX INC.  
XX  
XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
PI Jacobsen R, Jones RM, Cartier GE;  
XX  
XX MPI: 2002-257318/30.  
DR N-PSDB: ABL98916.  
XX  
XX New omega-conopeptides useful for treating disorders associated with  
PT voltage gated ion channels e.g. pain, inflammation, neurological or  
PT cardiovascular disorders -  
XX  
XX  
PS Claim 1(c); Page 52; 195pp; English.  
XX  
XX The invention relates to isolated omega-conopeptides, nucleic acid  
CC sequences encoding them, and propeptide sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
CC tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders. They may also be used  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
CC sequences.  
XX  
XX  
SQ Sequence 71 AA:  
Query Match 100.0%; Score 153; DB 23; Length 71;  
Best Local Similarity 100.0%; Pred. No. 3.7e-10;  
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 CKGTGKPCSRIRAYNCTGSCRSRGC 25  
DB 46 CKGTGKPCSRIRAYNCTGSCRSRGC 70  
RESULT 5  
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ID ABB96838 standard; Peptide: 25 AA.  
XX  
XX ABB96838:  
AC  
XX  
XX 12-JUL-2002 (first entry)  
DT  
XX  
XX Omega-conopeptide Cn6.7 toxin sequence.  
DE  
XX  
XX Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KW antimigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;  
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KW psychosis; anxiety; schizophrenia.  
XX  
XX  
XX Conus consors.  
OS

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XX  MO200207675-A2.
PN
XX
PD  31-JAN-2002.
XX
PF  23-JUL-2001; 2001WO-US23041.
XX
PR  21-JUL-2000; 2000US-219616P.
PR  05-FEB-2001; 2001US-265888P.
XX
PA  (UTAH ) UNIV UTAH RES FOUND.
PA  (COGN-) COGNETIX INC.
XX
PI  Oliviera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI  Jacobsen R, Jones RM, Cartier GE;
XX
DR  WPI; 2002-257318/30.
XX
PT  New omega-conopeptides useful for treating disorders associated with
PT  voltage gated ion channels e.g. pain, inflammation, neurological or
PT  cardiovascular disorders -
XX
PS  Claim 1(a); Page 71; 195pp; English.
XX
CC  The invention relates to isolated omega-conopeptides, nucleic acid
CC  sequences encoding them, and propeptide sequences. The activity of
CC  the peptides of the invention may be described as, analgesic,
CC  anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC  cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC  tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC  Peptides of the invention act by modulating the activity of voltage gated
CC  ion channels. They may be used for treating or preventing disorders
CC  associated with voltage gated ion channels such as neurological
CC  disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC  associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC  cerebrovascular accident, brain or spinal chord trauma, drowning,
CC  suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC  migraine; inflammation or cardiovascular disorders. They may also be used
CC  for treating psychiatric disorders e.g. psychosis, anxiety or
CC  schizophrenia. The analgesic agents of the invention show diminished side
CC  effects and toxicity, and are non-addictive. The sequences given in
CC  records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.
XX
SQ  Sequence 25 AA;
XX
Query Match 99.3%; Score 152; DB 23; Length 25;
Best Local Similarity 96.0%; Pred. No. 2e-10;
Matches 24; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
OY  1 CKGTGRPCSRRIANCTGSCRSKC 25
DB  1 CKGTGRPCSRVAYNCTGSCRSKC 25
XX
RESULT 6
ABB96634
ID  ABB96634 standard; Peptide; 71 AA.
XX
AC  ABB96634;
XX
DT  12-JUL-2002 (first entry)
XX
DE  Omega-conopeptide Cn6.7 propeptide.
XX
KW  Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW  neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW  antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW  anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW  neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW  stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW  drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW  migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW  psychosis; anxiety; schizophrenia.

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XX  Conus consors.
OS
XX
PN  MO200207675-A2.
XX
PD  31-JAN-2002.
XX
PF  23-JUL-2001; 2001WO-US23041.
XX
PR  21-JUL-2000; 2000US-219616P.
PR  05-FEB-2001; 2001US-265888P.
XX
PA  (UTAH ) UNIV UTAH RES FOUND.
PA  (COGN-) COGNETIX INC.
XX
PI  Oliviera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI  Jacobsen R, Jones RM, Cartier GE;
XX
DR  WPI; 2002-257318/30.
XX
PT  New omega-conopeptides useful for treating disorders associated with
PT  voltage gated ion channels e.g. pain, inflammation, neurological or
PT  cardiovascular disorders -
XX
PS  Claim 1(c); Page 40; 195pp; English.
XX
CC  The invention relates to isolated omega-conopeptides, nucleic acid
CC  sequences encoding them, and propeptide sequences. The activity of
CC  the peptides of the invention may be described as, analgesic,
CC  anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC  cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC  tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC  Peptides of the invention act by modulating the activity of voltage gated
CC  ion channels. They may be used for treating or preventing disorders
CC  associated with voltage gated ion channels such as neurological
CC  disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC  associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC  cerebrovascular accident, brain or spinal chord trauma, drowning,
CC  suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC  migraine; inflammation or cardiovascular disorders. They may also be used
CC  for treating psychiatric disorders e.g. psychosis, anxiety or
CC  schizophrenia. The analgesic agents of the invention show diminished side
CC  effects and toxicity, and are non-addictive. The sequences given in
CC  records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC  sequences.
XX
SQ  Sequence 71 AA;
XX
Query Match 99.3%; Score 152; DB 23; Length 71;
Best Local Similarity 96.0%; Pred. No. 4.8e-10;
Matches 24; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
OY  1 CKGTGRPCSRRIANCTGSCRSKC 25
DB  46 CKGTGRPCSRVAYNCTGSCRSKC 70
XX
RESULT 7
ABB96815
ID  ABB96815 standard; Peptide; 25 AA.
XX
AC  ABB96815;
XX
DT  12-JUL-2002 (first entry)
XX
DE  Omega-conopeptide Ay6.1 toxin sequence.
XX
KW  Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW  neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW  antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW  anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW  neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;

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stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 psychosis; anxiety; schizophrenia.  
 OS Conus auristiacus.  
 XX  
 XX WO200207675-A2.  
 XX  
 XX 31-JAN-2002.  
 XX  
 XX 23-JUL-2001; 2001WO-US23041.  
 XX  
 XX 21-JUL-2000; 2000US-219616P.  
 PR 05-FEB-2001; 2001US-265888P.  
 XX  
 XX (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNEX INC.  
 XX  
 XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobsen R, Jones RM, Cartier GE;  
 XX WPI: 2002-257318/30.  
 DR  
 XX  
 XX New omega-conopeptides useful for treating disorders associated with  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 PT cardiovascular disorders -  
 XX  
 XX Claim 1(a): Page 71; 195pp; English.  
 PS  
 XX The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as, analgesic,  
 CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.  
 CC  
 XX Sequence 25 AA;  
 SQ  
 Query Match 94.1%; Score 144; DB 23; Length 25;  
 Best Local Similarity 92.0%; Pred. No. 1.6e-09;  
 Matches 23; Conservative 1; Mismatches 1; Indels 0; Gaps 0;  
 OY 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
 DB 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
 ID ABB96607 standard; peptide: 71 AA.  
 XX ABB96607;  
 AC  
 XX 12-JUL-2002 (first entry)  
 DT  
 XX Omega-conopeptide Ay6.1 propeptide.  
 DE  
 XX Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;

anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.  
 XX  
 XX Conus auristiacus.  
 OS  
 XX  
 XX WO200207675-A2.  
 XX  
 XX 31-JAN-2002.  
 XX  
 XX 23-JUL-2001; 2001WO-US23041.  
 XX  
 XX 21-JUL-2000; 2000US-219616P.  
 PR 05-FEB-2001; 2001US-265888P.  
 XX  
 XX (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNEX INC.  
 XX  
 XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobsen R, Jones RM, Cartier GE;  
 XX WPI: 2002-257318/30.  
 DR N-PSDB: ABL98867.  
 DR  
 XX  
 XX New omega-conopeptides useful for treating disorders associated with  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 PT cardiovascular disorders -  
 XX  
 XX Claim 1(c): Page 28; 195pp; English.  
 PS  
 XX The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as, analgesic,  
 CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
 CC sequences.  
 CC  
 XX Sequence 71 AA;  
 SQ  
 Query Match 94.1%; Score 144; DB 23; Length 71;  
 Best Local Similarity 92.0%; Pred. No. 3.7e-09;  
 Matches 23; Conservative 1; Mismatches 1; Indels 0; Gaps 0;  
 OY 1 CKGTGKPCSRIVNCTGSCRSRGC 25  
 DB 46 CKGTGKPCSRIVNCTGSCRSRGC 70  
 ID ABB97540 standard; peptide: 25 AA.  
 XX ABB97540;  
 AC  
 XX 18-JUL-2000 (first entry)  
 DT  
 XX Mature conotoxin peptide #11.  
 DE

XX Mature conotoxin; brocade cone shell; line cone shell; drug screening;  
KM neuronal inhibitor; muscle inhibitor; analgesic.  
OS Conus sp.  
PN CN1237584-A.  
XX 08-DEC-1999.  
PD 30-APR-1999; 99CN-0106070.  
XX 30-APR-1999; 99CN-0106070.  
PF 30-APR-1999; 99CN-0106070.  
XX (BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.  
PA Lu B, Huang P;  
PI WPI: 2000-351193/31.  
DR Conotoxin peptide from brocade cone shells useful as analgesic -  
XX Claim 1a; Page 5; 20pp; Chinese.  
PS The invention relates to 14 novel mature conotoxin peptides from marine  
CC snails (Conus species); conotoxin precursor proteins; and cDNAs  
CC encoding the conotoxin precursors. The mature peptide sequences were  
CC discovered by obtaining conotoxin cDNA sequences from mRNA from the  
CC brocade cone shell (Conus textile) or the line cone shell (Conus  
CC striatus). The cDNA sequences were used to determine the conotoxin  
CC precursor protein sequences, and the sequences of the mature conotoxin  
CC peptides were inferred from the precursor sequences. The mature  
CC conotoxin peptides can be obtained via chemical synthesis or by in vitro  
CC gene expression. Conotoxins inhibit the function of neurons and muscle  
CC cells. Certain conotoxins interfere with synaptic transmission, while  
CC others act on muscle or at the neuromuscular junction. The 14 novel  
CC conotoxins have unique receptor specificity and affinity, so can be  
CC used as screening tools to identify new drugs. Conotoxin #11 (AAV87540)  
CC may be used for pain relief. Sequences AAV87420, AAV87522, AAV87524,  
CC AAV87526, AAV87528, AAV87530, AAV87532, AAV87534, AAV87536, AAV87538,  
CC AAV87540, AAV87542, AAV87544 and AAV87546 represent mature conotoxins  
CC #1-#14, respectively.  
XX  
SQ Sequence 25 AA;  
Query Match 92.8%; Score 142; DB 21; Length 25;  
Best Local Similarity 92.0%; Pred. No. 2.6e-09;  
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
QY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
DB 1 CKAGKPCSRIVNCTGSCRSKGC 25  
RESULT 10  
AAV87541  
ID AAV87541 standard; protein; 71 AA.  
XX AAV87541;  
AC 18-JUL-2000 (first entry)  
XX Conotoxin peptide #11 precursor.  
DE Conotoxin precursor; brocade cone shell; line cone shell; drug screening;  
XX neuronal inhibitor; muscle inhibitor; analgesic.  
KM Conus sp.  
OS  
XX  
XX Key Location/Qualifiers  
FH Misc-difference 6  
FT /note= "Encoded by ATG"  
XX

PN CN1237584-A.  
XX 08-DEC-1999.  
PD 30-APR-1999; 99CN-0106070.  
XX 30-APR-1999; 99CN-0106070.  
PF 30-APR-1999; 99CN-0106070.  
XX (BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.  
PA Lu B, Huang P;  
PI WPI: 2000-351193/31.  
DR N-PsDB; AAV10463.  
DR Conotoxin peptide from brocade cone shells useful as analgesic -  
XX Claim 1a; Page 5-6; 20pp; Chinese.  
PS The invention relates to 14 novel mature conotoxin peptides from marine  
CC snails (Conus species); conotoxin precursor proteins; and cDNAs  
CC encoding the conotoxin precursors. The mature peptide sequences were  
CC discovered by obtaining conotoxin cDNA sequences from mRNA from the  
CC brocade cone shell (Conus textile) or the line cone shell (Conus  
CC striatus). The cDNA sequences were used to determine the conotoxin  
CC precursor protein sequences, and the sequences of the mature conotoxin  
CC peptides were inferred from the precursor sequences. The mature  
CC conotoxin peptides can be obtained via chemical synthesis or by in vitro  
CC gene expression. Conotoxins inhibit the function of neurons and muscle  
CC cells. Certain conotoxins interfere with synaptic transmission, while  
CC others act on muscle or at the neuromuscular junction. The 14 novel  
CC conotoxins have unique receptor specificity and affinity, so can be  
CC used as screening tools to identify new drugs. Conotoxin #11 (AAV87540)  
CC may be used for pain relief. Sequences AAV87421, AAV87523, AAV87529,  
CC AAV87527, AAV87529, AAV87531, AAV87533, AAV87535, AAV87539,  
CC AAV87541, AAV87543, AAV87545 and AAV87547 represent the precursors of  
CC conotoxins #1-#14, respectively.  
XX  
SQ Sequence 71 AA;  
Query Match 92.8%; Score 142; DB 21; Length 71;  
Best Local Similarity 92.0%; Pred. No. 6.2e-09;  
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
QY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
DB 46 CKAGKPCSRIVNCTGSCRSKGC 70  
RESULT 11  
ABB96817  
ID ABB96817 standard; Peptide; 25 AA.  
XX ABB96817;  
AC 12-JUL-2002 (first entry)  
XX Omega-conopeptide Ay6.3 toxin sequence.  
DE Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
XX neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KM antidiabetic; tranquiliser; vulnerary; antipsychotic;  
KM anxiolytic; neuroleptic; voltage gated ion channel; epilepsy;  
KM neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KM stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KM drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KM migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KM psychosis; anxiety; schizophrenia.  
XX  
XX Conus aurisiacus.  
OS  
XX  
XX W0200207675-A2.  
XX

PD 31-JAN-2002.  
XX  
XX 23-JUL-2001; 2001WO-US23041.  
XX  
PR 21-JUL-2000; 2000US-219616P.  
PR 05-FEB-2001; 2001US-265888P.  
XX  
XX (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNEXIX INC.  
XX  
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
PI Jacobsen R, Jones RM, Cartier GE;  
DR WPI; 2002-257318/30.  
XX  
PT New omega-conopeptides useful for treating disorders associated with  
PT voltage gated ion channels e.g. pain, inflammation, neurological or  
PT cardiovascular disorders -  
PS  
PS Claim 1(a); Page 71; 195pp; English.  
XX  
CC The invention relates to isolated omega-conopeptides, nucleic acid  
CC sequences encoding them, and propeptide sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
CC cardiovascular, antiinflammatory, antipsychotic, anxiolytic and neuroleptic.  
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders. They may also be used  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.  
XX  
SQ Sequence 25 AA:  
Query Match 92.2%; Score 141; DB 23; Length 25;  
Best Local Similarity 92.0%; Pred. No. 3.4e-09;  
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
DB 1 CKAKGKPCSRIVNCTGSCRSKGC 25  
RESULT 12  
ABB96609  
ID ABB96609 standard; Peptide; 71 AA.  
XX  
AC ABB96609;  
XX  
DT 12-JUL-2002 (first entry)  
XX  
DE Omega-conopeptide Ay6.3 propeptide.  
XX  
KM Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
KM neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KM antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;  
KM anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KM neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KM stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KM drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KM migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KM psychosis; anxiety; schizophrenia.  
XX  
OS Conus auristiacus.  
XX

PN WO200207675-A2.  
XX  
XX 31-JAN-2002.  
XX  
XX 23-JUL-2001; 2001WO-US23041.  
XX  
XX 21-JUL-2000; 2000US-219616P.  
XX PR 05-FEB-2001; 2001US-265888P.  
XX  
XX (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNEXIX INC.  
XX  
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
PI Jacobsen R, Jones RM, Cartier GE;  
DR WPI; 2002-257318/30.  
DR N-PSDB; ABL98869.  
XX  
PT New omega-conopeptides useful for treating disorders associated with  
PT voltage gated ion channels e.g. pain, inflammation, neurological or  
PT cardiovascular disorders -  
PS  
PS Claim 1(c); Page 29; 195pp; English.  
XX  
CC The invention relates to isolated omega-conopeptides, nucleic acid  
CC sequences encoding them, and propeptide sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
CC cardiovascular, antiinflammatory, antipsychotic, anxiolytic and neuroleptic.  
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders. They may also be used  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
CC sequences.  
XX  
SQ Sequence 71 AA:  
Query Match 92.2%; Score 141; DB 23; Length 71;  
Best Local Similarity 92.0%; Pred. No. 8.1e-09;  
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
OY 1 CKGTGKPCSRIVNCTGSCRSKGC 25  
DB 46 CKAKGKPCSRIVNCTGSCRSKGC 70  
RESULT 13  
ABB96870  
ID ABB96870 standard; Peptide; 25 AA.  
XX  
AC ABB96870;  
XX  
DT 12-JUL-2002 (first entry)  
XX  
DE Omega-conopeptide Mn6.1 toxin sequence.  
XX  
KM Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
KM neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
KM antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;  
KM anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KM neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
KM stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KM drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KM migraine; inflammation; cardiovascular disorder; psychiatric disorder;

KM psychosis; anxiety; schizophrenia.  
 XX  
 OS Conus monachus.  
 XX  
 PN WO200207675-A2.  
 XX  
 PD 31-JAN-2002.  
 XX  
 PF 23-JUL-2001; 2001WO-US23041.  
 XX  
 PR 21-JUL-2000; 2000US-219616P.  
 PR 05-FEB-2001; 2001US-265888P.  
 XX  
 PA (UTAH) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNETIX INC.  
 XX  
 PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobsen R, Jones RM, Cartier GE;  
 DR WPI; 2002-257318/30.  
 XX  
 PT New omega-conopeptides useful for treating disorders associated with  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 PT cardiovascular disorders -  
 PS  
 PS Claim 1(a); Page 72; 195pp; English.  
 XX  
 PS The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as, analgesic,  
 CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antiinflammatory, antidiarrhoeal, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological injury  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.  
 XX  
 SQ Sequence 25 AA:  
 Query Match 90.8%; Score 139; DB 23; Length 25;  
 Best Local Similarity 92.0%; Pred. No. 5.7e-09;  
 Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
 OY 1 CKGTGKPCSRRIAYNCTGSCRSKGC 25  
 II III IIIIIIIIIIIIIIIIIIIII  
 DB 1 CKSTGKSCSRRIAYNCTGSCRSKGC 25  
 RESULT 14  
 ABB96661  
 ID ABB96661 standard; Peptide: 71 AA.  
 XX  
 AC ABB96661;  
 XX  
 DT 12-JUL-2002 (first entry)  
 XX  
 DE Omega-conopeptide M6.1 propeptide.  
 KM Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
 KM neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 KM antidiarrhoeal; antidiabetic; tranquiliser; vulnerary; antipsychotic;  
 KM anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KM neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KM stroke; cerebrovascular accident; brain trauma; spinal chord trauma;

KM drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KM migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KM psychosis; anxiety; schizophrenia.  
 XX  
 OS Conus monachus.  
 XX  
 PN WO200207675-A2.  
 XX  
 PD 31-JAN-2002.  
 XX  
 PF 23-JUL-2001; 2001WO-US23041.  
 XX  
 PR 21-JUL-2000; 2000US-219616P.  
 PR 05-FEB-2001; 2001US-265888P.  
 XX  
 PA (UTAH) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNETIX INC.  
 XX  
 PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobsen R, Jones RM, Cartier GE;  
 DR WPI; 2002-257318/30.  
 DR N-PSDB; ABU98920.  
 XX  
 PT New omega-conopeptides useful for treating disorders associated with  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 PT cardiovascular disorders -  
 PS  
 PS Claim 1(c); Page 53; 195pp; English.  
 XX  
 PS The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as, analgesic,  
 CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antiinflammatory, antidiarrhoeal, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
 CC sequences.  
 XX  
 SQ Sequence 71 AA:  
 Query Match 90.8%; Score 139; DB 23; Length 71;  
 Best Local Similarity 92.0%; Pred. No. 1.3e-08;  
 Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
 OY 1 CKGTGKPCSRRIAYNCTGSCRSKGC 25  
 II III IIIIIIIIIIIIIIIIIIIII  
 DB 46 CKSTGKSCSRRIAYNCTGSCRSKGC 70  
 RESULT 15  
 ABB96763  
 ID ABB96763 standard; Peptide: 25 AA.  
 XX  
 AC ABB96763;  
 XX  
 DT 12-JUL-2002 (first entry)  
 XX  
 DE Omega-conopeptide M6.1 generic toxin sequence.  
 KM Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;  
 KM neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;



Search completed: July 1, 2003, 10:51:20  
Job time : 26.7812 secs

KM antihypertensive; antidiabetic; tranquilizer; vulnerary; antipsychotic;  
KM anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
KM neurological disorder; neurotoxic injury; hypoxia; anoxia; ischemia;  
KM stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
KM drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
KM migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
KM psychosis; anxiety; schizophrenia.  
XX  
OS Conus magus.  
XX  
FH Key Location/Qualifiers  
FT Misc-difference 7 /label- OTHER  
FT /note- "OTHER is Pro or Hydroxy Pro"  
FT Misc-difference 13 /label- OTHER  
FT /note- "OTHER is Tyr, 125I-Tyr, mono-Iodo-Tyr or  
FT d1-Iodo-Tyr or O-sulpho-Tyr or O-phospho-Tyr"  
XX  
XX  
PN MO200207675-A2.  
XX  
PD 31-JAN-2002.  
XX  
XX 23-JUL-2001; 2001WO-US23041.  
XX  
PF 21-JUL-2000; 2000US-219616P.  
PR 05-FEB-2001; 2001US-265888P.  
XX  
XX (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNEX INC.  
XX  
XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
PI Jacobsen R, Jones RM, Cartier GE;  
XX  
XX WPI: 2002-257318/30.  
DR  
XX  
XX New omega-conopeptides useful for treating disorders associated with  
PT voltage gated ion channels e.g. pain, inflammation, neurological or  
PT cardiovascular disorders -  
PT  
XX  
XX Example 2; Page 52; 195pp; English.  
PS  
XX  
XX The invention relates to isolated omega-conopeptides, nucleic acid  
CC sequences encoding them, and propiety sequences. The activity of  
CC the peptides of the invention may be described as, analgesic,  
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,  
CC cardiovascular, antiinflammatory, antihypertensive, antidiabetic,  
CC tranquilizer, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
CC Peptides of the invention act by modulating the activity of voltage gated  
CC ion channels. They may be used for treating or preventing disorders  
CC associated with voltage gated ion channels such as neurological  
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
CC associated with conditions of hypoxia, anoxia, ischemia, stroke,  
CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
CC migraine; inflammation or cardiovascular disorders. They may also be used  
CC for treating psychiatric disorders e.g. psychosis, anxiety or  
CC schizophrenia. The analgesic agents of the invention show diminished side  
CC effects and toxicity, and are non-addictive. The sequences given in  
CC records ABB96698-ABB96806 represent omega-conopeptide generic toxin  
CC sequences.  
XX  
XX  
SQ Sequence 25 AA:

Query Match 88.9%; Score 136; DB 23; Length 25;  
Best Local Similarity 92.0%; Pred. No. 1.2e-08;  
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

07 1 CKGTGKPSRTAYNCTGSCRSRGC 25  
DB 1 CKGTGKPSRTAYNCTGSCRSRGC 25

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